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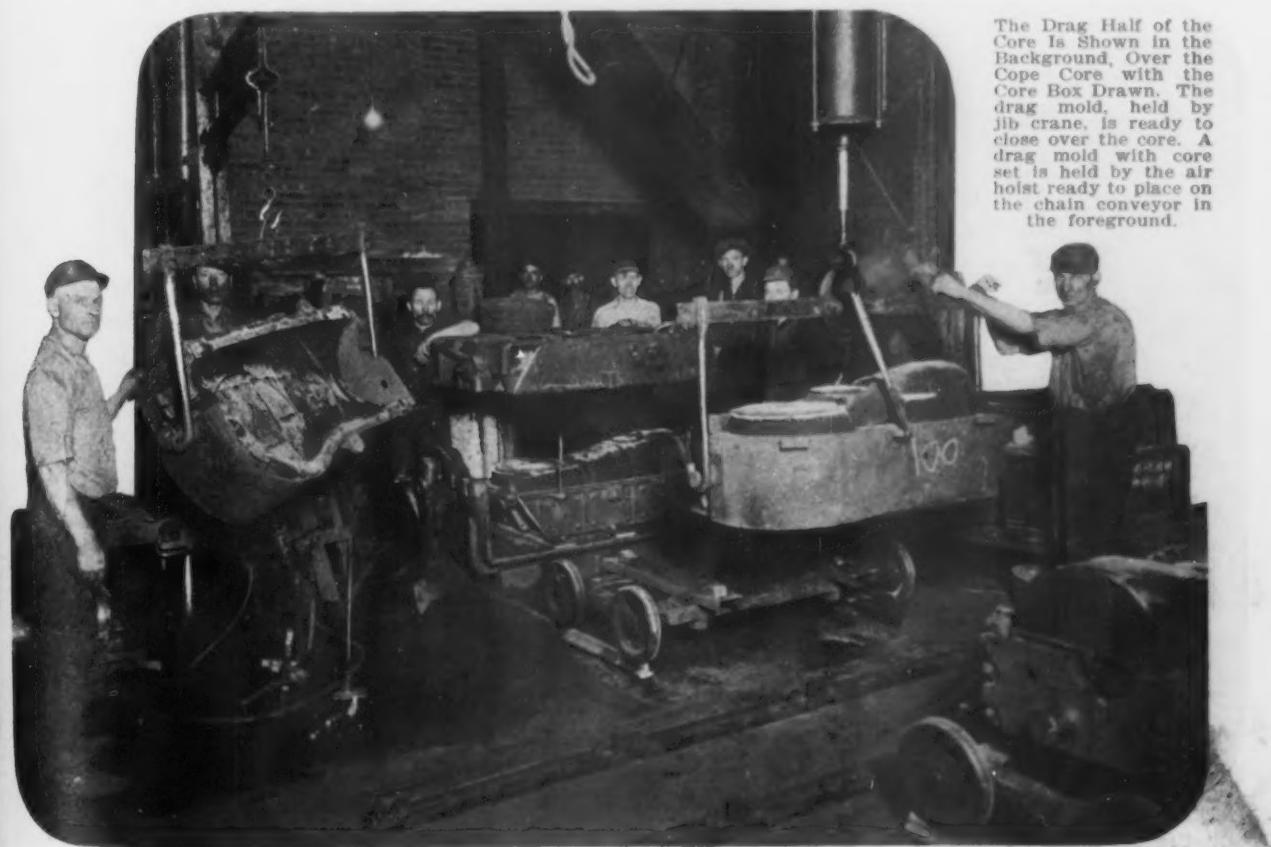
New Methods Speed Up Foundry Output

Conveyor Systems and Green Sand Cores
Used in Large Production Works—Jarring
Machines Remove Sand and Save Flasks

WHAT a foundry can accomplish in greatly reducing labor costs, by materially increasing production and in cutting down the floor space and number of flasks required when engaged on large production work, is exemplified in the foundry of the Ferro Machine & Foundry Co., Cleveland. This company improved the methods it had formerly followed in making transmission housings for the Fordson tractor, by the installation of a complete molding unit for making this particular casting, with a conveyor on the floor level for handling the molds, a conveying system for molding sand, and a change of its foundry practice in the substitution of green sand for dry sand cores, eliminating much of the labor in making cores, and resulting in a marked saving in the number of flasks damaged or scrapped, and in the amount of core sand used. Briefly, the drag mold, with core in place made on three molding machines, adjoining the end of the con-

veyor, is placed on the conveyor and the cope mold is added and the metal is poured while the mold is moving along the conveyor, which carries it to jarring machines that shake out the flasks and the green sand cores. The installation includes duplicate molding units, one on each side of the conveyor, and both served by the same sand-handling system.

The transmission housing casting, weighing 218 lb., presents a rather difficult core-making problem for the reason that in addition to a large bearing wall on the inner surface, it has a small double bearing wall through which the crank shaft passes. Originally a dry sand core was used, but the company later adopted a plan of making the upper half of the core with green sand and the lower half with dry sand. This has been substituted by the practice of making the entire core of green sand. The double bearing wall complicated the problems of the core maker, but



The Drag Half of the Core Is Shown in the Background, Over the Cope Core with the Core Box Drawn. The drag mold, held by jib crane, is ready to close over the core. A drag mold with core set is held by the air hoist ready to place on the chain conveyor in the foreground.

these were solved by the use of a collapsible arbor of a special type to support the drag half of the core. The amount of core sand saved on large production work on this casting is indicated by the fact that a half core in dry sand weighs 205 lb.

The drag half of the core is molded on a special type of jar roll-over machine. The drag core box is supported between two arms in this machine, the arms swinging on a pedestal located back of the jar table, and are counter-weighted. The core box is raised and lowered by a movement of the arms, their function in that respect being very similar to that of a jib crane. The arms are fitted with trunnions which support the drag core box and permit the turnover of the core box. A collapsible arbor consisting of a long stem and eight wings fastened to the core box by set screws, and a flat lifting plate resembling a stove cover in appearance, with a hole in the center, are used to support the sand in the drag half of the core. The two ends of the main stem of the collapsible core are machined and fit in openings in the drag flask, also machined, thus supporting the weight of the core. The sole function of the flat plate is to support the drag half of the core when closing the two cores. No arbors are used in the cope core. A machine is located under the drag core box for jar ramming the drag core, but this has not yet been placed in use.

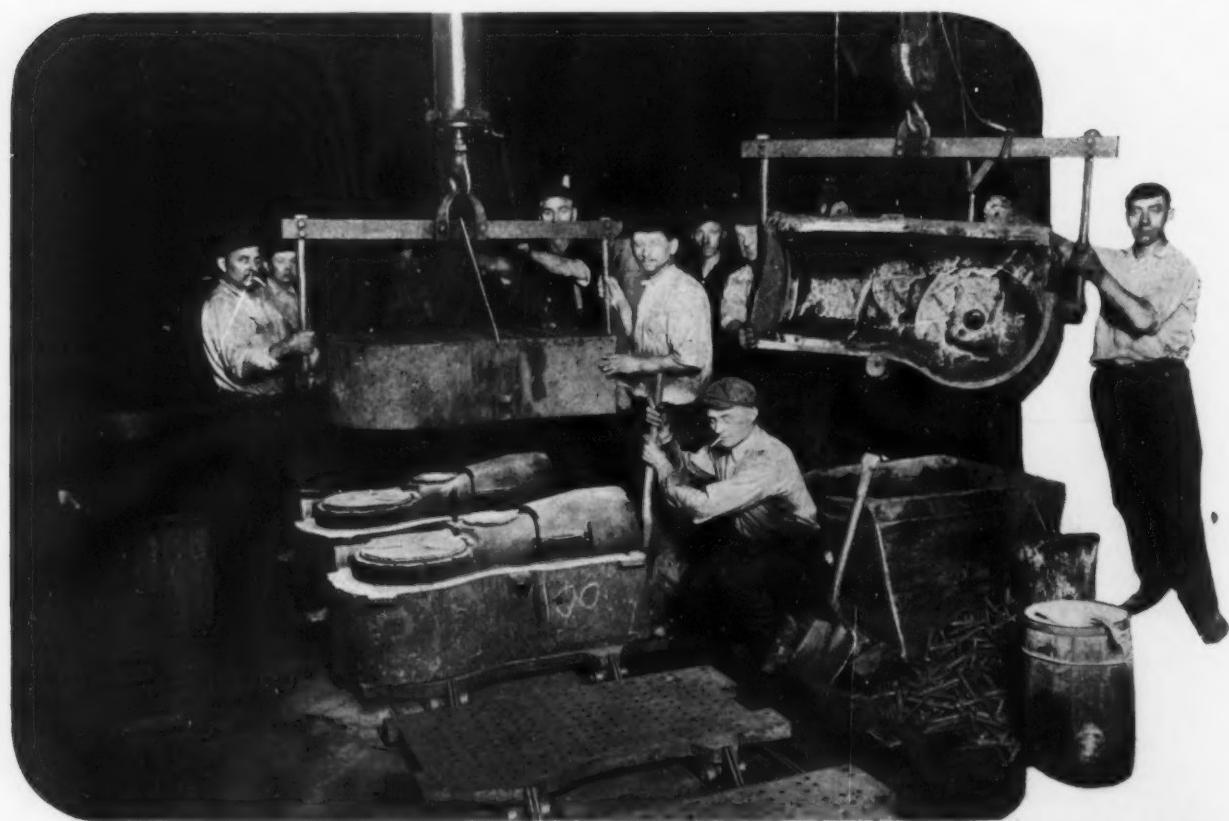
The drag core box is placed on the jar table with a jib crane, and after the drag core is molded, air is turned on, the arms supporting the core box are raised and swung around half a circle over an Osborn jar ramming roll-over machine, that is used for molding the cope half of the core, and so located that the drag core box will swing directly over the cope core box. After the cope half is rammed and struck off, the drag half, swung around in the arms and turned over, is lowered on a cope half, and the two cores

are closed, the two halves being located by pin holes in both core boxes. Then the thumb set screws of the collapsible arbor are released, air is turned on and the drag half of the core box is drawn.

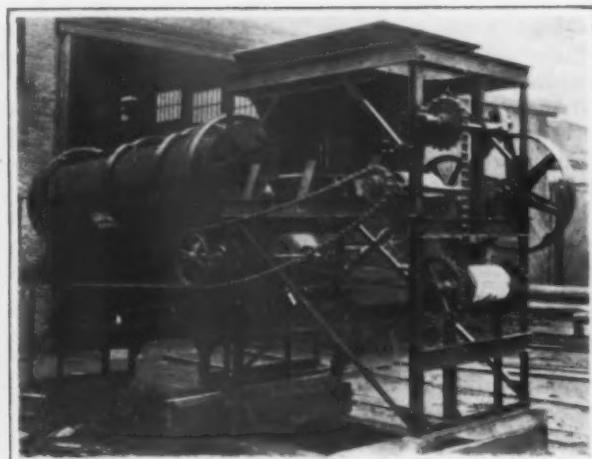
The drag mold is made in green sand on an Osborn stripping plate machine adjoining the two core machines, and after being rammed is placed over the drag core with a jib crane, being matched by means of the same pin holes used for locating the drag core. Then the drag mold is clamped over the drag core, and upon the cope core box, after which the machine is rolled over, bringing the cope core box on top and with the drag core located inside the drag mold. The drag mold is then placed on a car at the side of the machine, the clamps are released and the cope core box is drawn off and the half mold with the two half cores in position in the drag mold are placed on the conveyor with an air hoist that travels on an I beam.

The mold conveyor is an ordinary double strand chain conveyor. The flasks resting on their own bottom boards, slide on T rails and rest against arms projecting from the chain spaced 36 in. With the two moving units in full operation the conveyor will be kept constantly filled with molds 36 in. apart. The pull of the conveyor when loaded on the two chains is 14,000 lb. The conveyor is driven by a $7\frac{1}{2}$ -hp. motor.

The drag mold and core move down the conveyor 20 ft. and at that point, while the mold is slowly moving along the conveyor, the cope mold is placed on the drag mold with an air hoist. The cope mold is made on a stripping plate machine, a duplicate to that used for making the drag mold. Then, as the mold is moving along the conveyor it is clamped, and it is poured within 10 ft. of the point where the mold is completed. The metal is poured from 500-lb. ladles which are supplied from large ladles that bring the metal from the cupola. After pouring,



A Completed Drag Mold Is Located on the Conveyor with the Cope Mold Hanging Ready to Be Placed on the Drag Mold, While the Latter is Slowly Moving Along the Conveyor.



At the Left Is Shown the Equipment for Shaking Out the Sand. In the foreground is a jolt machine which shakes the sand from the flask after the casting is removed, the cope flask being raised with an electric hoist and set back in place. In the background the casting is shown standing on end in a jig on one of the smaller jolt machines used for shaking out the core.

Sand Shaken Out from the Flasks and Cores Is Discharged into the Hopper of the Machine, Illustrated Above, Located in the Basement Under the Jolt Machine, and Is Screened and Passes to an Elevator Which Carries It to a Disintegrator. This picture was taken before the machine was installed. The machine is built along standard lines, but compact in form in order to occupy no more space than is necessary.

the clamps are released and the stem of the arbor is removed, being driven out from the smaller end fitting in the flask and through the larger opening of the flask in which the other end of the arbor stem fits. This leaves the arbor wing loose in the core and they are later jarred out with the core sand, from which they are picked out and sent back to the foundry floor for reassembling.

The mold continues its movement to the end of the conveyor where the flask is picked up by an electric hoist and put on a Federal plain jolt machine. Then the cope flask is raised, the casting is removed from the drag flask with another electric hoist, the cope flask is put back on the drag flask, and the two flasks are shaken out on the jarring machine. While the flasks are being shaken out the hoist carries the casting along a few feet and places it, end up, on a smaller jarring machine, there being two of these machines side by side for shaking the green sand core from the casting. While on this machine the casting is supported by a circular jig which prevents it from toppling over while being jarred. After the core sand is shaken out an electric hoist carries the casting to the front of a double sand-blast room consisting of two 8 x 12-ft. rooms. It is the intention to extend the conveyor system through the sand-blast rooms, which will be provided with doors at each end. These will be double doors. Then the castings will be carried into the room on the conveyor, one at a time, and after one is cleaned it will move out the opposite side to the chipping department and another casting will be ready for the sand-blast operator, making a continuous operation instead of putting 12 castings in the sand-blast room as at present.

The sand shaken from the flask and from the casting is delivered into a hopper in the basement under the jarring machinery. Underneath the hopper is a mechanical feeder which in turn delivers the sand to a screen by means of a short belt conveyor. Underneath the screen is another short belt conveyor which delivers the screened sand to an elevator of the standard type, the sand being elevated by a belt with 12 x 7-in. buckets. This elevator has a capacity of about 50 tons per hr. From the elevator the sand goes to a disintegrator,

receiving water in a spout between the elevator and disintegrator. From the disintegrator it drops into a 25-ton storage bin. Under this bin is another feeder that controls the flow of the sand to the distributing system.

The distributing system consists of three belts 20 in. wide forming three sides of a rectangle. The first belt carries the sand up an incline to above the foundry floor, and then on over one molding unit, the sand being swept from this belt into small storage bins over each molding machine. At the end of this belt sand is carried on a cross-over belt and back on another belt parallel to the first, which supplies the second molding unit. Surplus sand is discharged from the lower end of the third belt to the storage bin and back into the system. The sand conveying belts are operated at a speed of 75 ft. per min. The mold conveyor and sand-handling and mixing equipment were built by the C. O. Bartlett & Snow Co., Cleveland.

The capacity of the two molding units and conveyor is expected to reach 400 molds in 16 hr., or 100 molds from each unit in an 8-hr. turn. With one molding unit in operation 30 molds have been made in 2½ hr., or one every 5 min. The second molding unit has just been placed in operation, and with a new gang of molders it will take a little time to get the system up to maximum operation. With both units in operation at capacity it is expected that a speed of one mold in 2 min. will be attained, or at the rate of 240 in 8 hr., but some time will be lost at lunch time, so that all the spaces on the conveyor will not be kept filled up all the time. The conveyor is operated at a speed of 13½ in. per min., or 22 molds per hr., but it is planned to increase the speed to 18 in. per min. A gang of 11 men is employed on each unit.

The floor space occupied is approximately 40 x 80 ft. outside of the sand-blast equipment. This is practically the same amount of floor space as was used in making 125 molds under ordinary methods. As the flasks are kept moving continuously, fewer flasks are required than would be needed under ordinary practice, 50 flasks being regarded as sufficient for use in a daily production of 400 castings. It is only 30 min. from the time the cope and drag

flasks are clamped together after the completion of the mold until the flasks are returned to the molding machines to be used again.

When the sand was knocked out with sledges as was formerly done, about five out of every 100 flasks were damaged, and one out of five was broken, so that it had to be scrapped. Since the plan of jarring out the sand has been followed, no flasks have been damaged in the shaking out operation, this saving being a very important item, as the flasks cost about \$80 each.

Hot metal is supplied from one of the regular cupolas for the operations during the day turn, and a new 84-in. cupola is being installed conveniently located to the molding unit for supplying metal during the night turn, it being the intention to operate the units 16 hr. per day on two turns.

The molding system was devised by J. T. Stoney, superintendent of the foundry, who has applied for patents on the method of molding, the roll-over machine for molding the drag half of the core and the collapsible arbor.

Eliminating the Stop Watch from Industry

Production Rates, Determined by Conferences with Workers, and Efficient Management Are Essentials

BY C. E. KNOEPPEL*

FROM 75 per cent to 85 per cent of the possible results from modern methods of management in industry can be secured without the use of the stop watch in timing workers and studying operations. This may seem a rather startling statement, but it is based on a sincere conviction at a time when the announcement may serve to advantage in focusing the eyes of both workers and employers on the absolute necessity of greater production in industry, that we may reduce the cost of living and improve the relations between capital, management and labor.

In the past I have advocated the use of the stop watch and have used it in my professional work. Some four years ago, however, I began to see evidences of its unpopularity in industry, and began to study the entire situation with the view to getting along without it, since which time the organization of which I am head has made no use of the stop watch in its regular work of eliminating industrial inefficiency, and we can see no use for it in the future, as excellent results have been and can be secured without its use.

Inefficiency and the Management

Our experience has convinced us that the inefficiency almost universally met with in industry, which is a factor largely responsible for the high prices we are now fighting, is not all due to the inefficiency of the worker. As a matter of fact the greatest part of the inefficiency found is due to the shortcomings of management. Unless a plant is properly organized; unless there are reliable records on which to base conclusions; unless production is properly controlled; unless working conditions and facilities are what they should be, workmen cannot work efficiently, whether they want to or not. Idleness in equipment, waste in floor space, inadequate manufacturing facilities, too much material tied up in stock, over-equipment, breakdowns and repairing equipment during working hours, failure to provide work, or material or tools on time, are certainly factors not within the control of the workers in a plant. This does not mean that there is no inefficiency on the part of the workers, but it does mean that the greatest inefficiency is that of management and that you cannot get a high degree of labor efficiency with a low management efficiency.

Our experience has proved further that through efficient organization, proper records, control of production and improved facilities, manufacturing efficiency can be materially increased and in accomplishing these things no stop watch was necessary.

Labor and the Stop Watch

This brings us up to the matter of the workers' part in industry. In the use of the numerous essentials necessary in industry, labor is only concerned with one

of them—doing the work. In this the element of time enters, and the thought behind the use of the stop watch has been to study this use of time by labor.

It is, of course, true that labor has felt that the less hours it worked the more work there will be for more people. In some cases labor has even gone so far as to take the attitude that it should reduce the amount produced per hour, so that there has been observed a threefold tendency:

Less hours work per man,
Less production per hour per man,
Greater wages per hour per man,

which is the basis of the vicious cycle of increasing prices.

The stop watch will never get these ideas out of labor's mind, even if it does show that these conditions exist. Only education and bitter experience will show labor the fallacy of less hours for more wages, which narrows the use of the stopwatch down to—

Determining equivalencies and tasks;
Determining lost motion and waste,

as they relate to the use of time by labor.

We realize only too well the economic importance of increasing hourly productions by labor, and that equivalencies must be known in advance so that they may be currently watched and comparisons made. Determining what is a fair hour's work for different operations in industry, that men and equipment can turn out without injury to health or well-being or detriment to equipment, is what is meant by equivalency. This is an economic fundamental, for if we can secure increased hourly productions we need not concern ourselves so much about the matter of wages or the hours of labor. It is altogether a matter of securing production by utilizing every facility that can be invented and every method that can be devised toward getting out a maximum or quantity production. The greater the hourly production the less the cost. The less the cost the greater the demand, and the greater the demand the more business there will be. The more business there is the more demand there will be for labor.

Eliminating the Stop Watch

Careful estimates, however, with changes in hourly production rates made from time to time, up or down, will ultimately bring hourly equivalents to where they would be if a stop watch had been used. The logical question arises, How will these estimates be made if we do not use a stop watch? By conferences between those responsible for determining these hourly equivalents, the workers and the foremen, studying the work to be done, plus an analysis of records showing past performance. In other words, determination of hourly equivalents would be a matter of bargaining, based on intelligent discussion, which would get away from the

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arbitrary methods so often pursued in setting rates. If subsequent effort proved the hourly equivalent to be beyond the attainment of the worker it is corrected in the same manner as it was set. If the equivalent is easy of attainment, the same method is followed in increasing it. In other words, it is a "give and take" proposition. Further, in determining hourly equivalents, the idea is to arrange for an average performance by an average man over an average period of time.

The use to which these hourly equivalents are put is in planning and routing work through the plant so that in dispatching shop operations, like dispatching trains, we may know the length of time between points and arrange accordingly. They are not used for setting piece rates or bonus times as the matter of incentives should not be taken up until proper organization, records, production control, proper plant conditions and facilities and knowledge of hourly equivalents are provided. If they are provided any fair method of wage payment will induce the support and co-operation of the worker and enable him to work to better advantage.

It is apparent, therefore, that the stop watch is not needed in determining hourly productions, as intelligent estimates based on proper discussion and a study of the work will serve in the long run to make equivalents as accurate as if determined by stop-watch study. In determining lost motion and waste the steps above outlined will do much to locate and eliminate them. To adequately control production it is necessary to perfect organization, provide records and study and better equipment and facilities, which in themselves will do much to increase operating efficiency. Therefore, if the stop watch is not a factor in the one case it is certainly not a factor as regards the other.

Determining Bonus Times and Piece Rates

We have no quarrel with those who advocate the use of the stop watch. Refinements in results can undoubtedly be secured through its use. As a basis for determining bonus times and piece rates it may have a place in industry, although our experience shows that by the time we are ready for the matter of rates and times on which to base earnings, hourly productions will have been reduced to a practical basis and sufficiently accurate for the setting of rates. The stop watch can in many cases be used in determining what equipment should do, although in this it has been our experience that mathematical calculations will determine what equipment should do on a given piece of work. We have simply found through experience, and this is our best teacher, that we have been able to operate to advantage and secure satisfactory results in industry without the use of the stop watch.

With labor opposed to it, as well as many managements, it became clear to us that in the long run there would be little gained in attempting to force its use on industry, especially after we had demonstrated to our own satisfaction that there was sufficient to do in eliminating the inefficiency of management, resulting from faulty organization, improper records, lack of production control, inadequate shop facilities, faulty working conditions and failure to know hourly equivalents, the betterment of which would make it possible to pave the way for greater efficiency on the part of the workers, without setting tasks for bonus or piece-work. It is true that many times the criticism on the part of labor and management has not been so much against the stop watch itself as the use to which the results were put, and it might be said that determining hourly equivalents by the estimate and conference method is but another way of attaining the same end. Our feeling as to this, however, is that to get more production it must first be controlled, and that to control production properly it is essential that we know within practical limits the time a given piece of work should take so as to plan to have equipment, labor and material ready at the right time, and that it is just as much to labor's interest as that of the employers to reduce idleness and lost time to a minimum.

It seems, therefore, that by eliminating the stop

watch and making a clean-cut separation between the inefficiency of management and the inefficiency of the workers, the way is paved for a better relationship between workers and employers, and increasing industrial efficiency all along the line.

Carburizing Furnaces Fired by City Gas

The following data regarding the use of a gas-fired furnace for carburizing steel, made by the Davis Furnace Co., Luton, England, are furnished by the company:

Although the advantages offered by the gas-fired furnace for carburizing have been generally recognized in the past from such points of view as close temperature regulation, decreased attendance, greater convenience, etc., very little information has been published regarding the consumption figures for this process, and it has been a matter of great difficulty to obtain authentic information upon this point either from makers or users of such furnaces.

Data as to the details of actual consumption figures of a Davis "Revergen" furnace in this work will be of interest. The type of furnace in question is provided with regenerators of special design, and is fired with town gas at ordinary pressure, the air being introduced to the furnace at a slight pressure of about 3 or 4 in. water gage. The figures recorded are not the result of any specially prepared test run, but merely an odd case-hardening job undertaken to oblige some customers whose requirements were that the material was to be charged into a cold furnace, raised to 900 deg. C., and maintained at that temperature for 8 hr. to give the necessary depth of case. The work consisted of automobile gear wheels, packed in six boxes, the total weight being 713 lb.

The required temperature of 900 deg. C. was obtained in 70 min. from lighting up, the figures recorded being as follows:

	Cu. Ft. Per lb.	Cu. Ft. Total
Gas to raise furnace and charge from cold to 900 deg. C.	1.29	925
Gas to maintain 900 deg. for 1st hr.	0.38	275
Gas to maintain 900 deg. for 2d hr.	0.42	300
Gas to maintain 900 deg. for 3d hr.	0.38	275
Gas to maintain 900 deg. for 4th hr.	0.42	300
Gas to maintain 900 deg. for 5th hr.	0.49	350
Gas to maintain 900 deg. for 6th hr.	0.49	350
Gas to maintain 900 deg. for 7th hr.	0.45	325
Gas to maintain 900 deg. for 8th hr.	0.45	325

The total gas consumption for this run of 9 hr. 10 min. was only 4.8 cu. ft. per lb. of load.

From the above figures it is of course possible to calculate readily the approximate quantity of gas required for any period of carburizing and therefore for any depth of case, and we hope that the information may be of service to any who may be interested in the running costs of up-to-date regenerative gas-fired furnaces.

A breezy periodical for circulation in its own offices and edited by K. G. Martin of the company has been brought into existence by the American Steel Export Co., Woolworth Building, New York. From it some facts are learned that are of interest outside the confines of the company's offices. For example, F. H. Tackaberry has arrived in London; Mr. Orbanowski will shortly arrive in Copenhagen, chiefly in the interest of the East European Trading Co., one of the subsidiaries of the American Steel Export Co., and with plans which evidently contemplate visits to the Balkans, Russia and the Baltic region; Mr. Warlow has sailed for Buenos Aires, while Joel B. Ives of the engineering department has departed for Italy and France.

Under what is called the "Anglo-American Industrial Duel," Maurice Houyet in *L'Usine* discusses in the issue of that journal for Aug. 21 the tin-plate situation. His recounting of developments in the last few years hardly bears out the formidable suggestion of the title. Emphasis is placed on the considerable volume of tin-plate bars and other forms of steel once obtained from northern France and Belgium by the Welsh tin-plate makers, who thus secured material at a relatively low cost—not now of course—to be secured at any price.

Compensated Heatmeter

A new compensated pyrometer or heatmeter so-called, designed to eliminate the effect of line and thermo-couple resistance on the accuracy of the readings, has been brought out by the Brown Instrument Co., Philadelphia. A brief announcement of the heatmeter was made in THE IRON AGE of Aug. 14, but some further particulars are obtainable from a monograph on the subject prepared by Charles P. Frey, chief engineer of the Brown company. His discussion of the numerous factors involved in pyrometry of this sort and his analysis with some simplified mathematics of the operation of the new instrument can probably be obtained by addressing the company. Meanwhile the following in ex-



Heatmeter Designed to Eliminate the Effect of Line and Thermo-couple Resistance on the Accuracy of the Readings.

planation of the new instrument will serve to outline its main feature.

The new heatmeter represents in part an invention offered to the Brown company by Paul D. Foote and T. R. Harrison, physicists of the Bureau of Standards, Washington. When the thermo couple used for measuring the temperature is connected to the heatmeter, the deflection of the needle is noted. The scale for this purpose is, of course, calibrated to read in degrees of temperature. The key at the left-hand side of the instrument is then pressed and if the pointer or needle moves either up or down the scale the rheostat handle at the right is turned in whichever direction is necessary to get the same deflection of the needle whether the key is pressed or not. What the invention aims at securing is an elimination of line resistance so that the instrument itself will give a reading which corresponds to the actual electromotive force of the thermo couple at its hot end, even if, say, the line connecting the couple and the instrument is miles in length.

The first deflection of the needle may not be a true one because of an unknown amount of resistance outside of the instrument proper. The pressing of the key then allows part of the current to pass through a shunt circuit with a known amount of resistance parallel with the coil which influences the deflecting needle. The rheostat then varies the resistance in the main circuit and thus effects a compensation of the more or less unknown or variable resistance, as the mathematical analysis referred to shows.

The annual convention of the National Machine Tool Builders' Association will be held at Hotel Astor, New York, Oct. 15 and 16.

To Make 6-Ft. Lap-Weld Steel Pipe

The National Tube Co., Pittsburgh, has started the erection of a new plant at its Christy Park works, McKeesport, Pa., for the manufacture of steel pipe of larger diameter than can be made by the ordinary lap-weld process, the maximum of which has heretofore been 30 in. The new plant will make at the start lap-weld pipe in sizes from 20 in. up to 6 ft. in diameter, and later up to 8 ft. The process to be used is known in Europe, where it was developed, as the "water-gas-welding" process, the heating for welding being done by water gas. The process hitherto used in this country is called "forge lap welding" or "horn welding." The plant will comprise large welding and finishing buildings, water-gas generating apparatus, a gasometer and various auxiliary equipment.

Numerous other improvements will be made to the Christy Park works. A large general office building and a combined cafeteria and club house will be built between Walnut Street and the Baltimore & Ohio Railroad, with an entrance to the works between them through a subway under the railroad tracks. All communication between the mills and the office, club house and cafeteria will be through this subway to eliminate the danger to employees of crossing the railroad tracks. Several new shops and storage buildings are included in the improvement program, as well as additional tracks and other general plant facilities. New provisions for the convenience and comfort of employees are up-to-date toilet rooms, shower baths, etc. The club house, in addition to containing the cafeteria, will be provided with a basket-ball floor, bowling alleys, billiard tables, etc., for the use of all employees.

Attaching Machinery to Floors Without Bolts

A method of attaching machinery to floors of concrete, asphalt, wood, etc., is announced by the Euboeolith Co., Ltd., Olten, Switzerland. The method consists in interposing between the floor and the base of the machine a specially prepared pad, stated to be air and damp proof, impervious to oil, elastic and anti-vibrating. The pad varies in thickness to suit the weight and power of the machines. Both sides of these slabs are coated with a special preparation procured from certain exotic plants, which is heated for use. On cooling, the material gives to the felt slabs a solid adhesion both to the floor and the base of the machine. These slabs, being unpierced by bolts, isolate the machines from the bed or floor and are explained as absorbing vibration and suppressing noise.

Features emphasized include speed of placing and removing machines, and elimination of damage to the floors.

The Euboeolith Co. is represented in the United States until Oct. 8 by Dr. George Wettstein, who can be addressed in care of the Swiss Consulate, 100 Fifth Avenue, New York. Patent rights in the United States have not as yet been negotiated.

Screw-Thread Practice in Automotive Industry

At the request of the National Screw Thread Commission the Society of Automotive Engineers held a meeting recently for the purpose of securing the best information of a comprehensive nature as to what is most desirable in screw-thread practice in the automotive industry. It was decided that the best procedure would be to gather from representative manufacturers in practical shop form definite information as to present practice. A committee that will direct the collection and analysis of data includes Paul W. Abbott (chairman), Lincoln Motor Co.; R. P. Smith, Packard Motor Car Co.; Lyle K. Snell, Willys-Overland Co.; Alexander Taub, General Motors Corporation, and W. K. Jamison, Domestic Engineering Co.

The Somers, Fitler & Todd Co., Pittsburgh, has been appointed exclusive agent for western Pennsylvania, eastern Ohio and northern West Virginia for the Rivett Lathe & Grinder Co., Boston.

Rights of Manufacturers Upheld by Court

Judge Orr Decides that Federal Trade Commission Has No Right to Demand Books and Other Records Relating to Costs—Victory for Pittsburgh Company

A very important decision, involving the power of the Federal Trade Commission, was handed down last week at Pittsburgh, by Judge Charles P. Orr, of the district court of the United States for the western district of Pennsylvania, in the case of the United States of America against the Basic Products Co. According to the petition of the plaintiff, the Federal Trade Commission on March 8, 1917, passed a resolution providing that in accordance with Section 6 of the act of Congress creating a Federal Trade Commission, the Commission should proceed to collect information concerning the organization, business, conduct, practices and management of the Basic Products Co. In accordance with this resolution and Section 9 of the act of Congress, L. W. Plowman and H. L. Maxey were designed agents of the Commission to collect evidence concerning the company, the agents to make demand on the company for books, papers and other data. The two agents made the demand as provided by the resolution and asked particularly that they be permitted to examine and take copies of all documentary evidence relating to the production costs, annual production and capital investment of the manufacturing of a commodity known as syndolag.

Refused Permission

The company refused to permit the representatives of the Commission to examine the documentary evidence and make copies of it.

In answer to the petition, the Basic Products Co. asserted that it is a manufacturer of a patented article known as syndolag, which has been developed after great expenditure of time and money, and which, among its other uses, is widely sold for repairing the bottoms of open-hearth steel furnaces, a purpose for which formerly only imported Austrian magnesite could be used. In its development the company asserted it has discovered certain refinements of method which have been kept secret by it and constitute trade secrets of great value, as are also cost accounts.

Continuing the answer, the defendant stated that on Sept. 4, 1918, the Navy Department of the United States ordered 250 tons of syndolag for which the defendant quoted a price of \$35 per ton, then the usual and ordinary price, but the Navy Department refused to agree to such a price and required the material to be billed at the tentative price of \$30 per ton. Pursuant to such order, the defendant shipped to the department 64.9 tons of the material. After the armistice with Germany was signed the remainder of the order was canceled by the Navy Department and the company waived any claim against the United States by reason of such cancellation.

Demands of Navy Department

During November and December, 1918, and January and February, 1919, repeated demands were made by the Navy Department for affidavits from the company showing its cost of production of syndolag for the pretended reason of enabling the Navy Department to decide upon the price which it would be willing to pay for the product. The company then offered, and in the answer in the proceeding renewed the offer, to accept any price for the material which the Navy Department might see fit to pay. The Navy Department on Dec. 14, 1918, and Jan. 19, 1919, paid the company at the rate of \$30 per ton for all the syndolag delivered. The company, prior to the filing of the answer in the present proceeding and in the answer, renewed the offer to return to the department any part of such price in excess of the price which the Navy Department

might see fit to pay, or should the Navy Department be unwilling or unable to fix such price, the company would refund the whole amount received for the product.

The answer further avers that although the foregoing offers were continuously made, yet, under the pretense of fixing a price, the demands for affidavits were made by the Navy Department without reason or just cause. When the company finally refused to furnish the affidavits, the Navy Department's demands were taken up by the Federal Trade Commission at the request of and for the purpose of the Navy Department in an effort to obtain for the department such information through the assertion of the power of the Federal Trade Commission. The letter of the Commission asking that Messrs. Plowman and Maxey have full access to the books and records of the company was given as part of the answer, and it is stated that the company has refused, and unless required by court, will continue to refuse to surrender its trade secrets to any such examiners, or to any other representatives of the Commission or Navy Department.

Claimed to Be Unconstitutional

The company charges that the demand of the Federal Trade Commission is unlawful, unconstitutional and void, and would constitute an unreasonable search and seizure from which the company is entitled to protection by the fourth amendment of the constitution of the United States.

To the company's answer, the plaintiff filed a demurrer and upon this demurrer the decision of the court was rendered. When filing the demurrer it was set forth by the plaintiff that any reason which the defendant might have to withhold its books from inspection should have been presented to the Federal Trade Commission and not to the court; that there is no attempt in the proceeding to take the properties or records of the company without due process of law.

Judge Orr says that the act of Congress under which the Federal Trade Commission proposed to investigate the cost of producing a patented product does not in terms justify such proceeding. The act is aimed at unfair methods of competition in commerce. This is shown by the first paragraph of Section 5 which refers to "unfair methods of competition in commerce." The provision is qualified by the meaning given in the act to the word "commerce." Section 4 provides that the word "commerce," when found in the act, means "commerce among the several States or with foreign nations or in any territory of the United States, or in the District of Columbia, or between any such territory and any State or foreign nation, or between the District of Columbia and any State or territory or foreign nation." The Commission is empowered to prevent unfair methods of competition in commerce, and in this case relies upon subdivision (a) of Section 6 of the act which provides that the Commission shall also have power:

(a) To gather and compile information concerning and to investigate from time to time the organization, business, conduct, practices and management of any corporation engaged in commerce, excepting banks, and common carriers subject to the act to regulate commerce, and its relation to other corporations and to individuals, associations and partnerships.

Judge Orr quoted from the opinion of Judge Jackson in re Greene, 52 Federal, 104-113, in which it was held that

Neither the production nor manufacture of articles or commodities which constitute subjects of commerce, and which are intended for trade and traffic with citizens of other States, nor the preparation for their transportation

from the State where produced or manufactured, prior to the commencement of the actual transfer, or transmission thereof to another State, constitute that interstate commerce which comes within the regulating power of congress; and, further, that after the termination of the transportation of commodities or articles of traffic from one State to another, and the mingling or merging thereof in the general mass of property in the State of destination, the sales, distribution, and consumption thereof in the latter State forms no part of interstate commerce.

"Imagination," said Judge Orr, "if not experience, can suggest that persons, partnerships and corporations may be engaged in interstate commerce by the transportation of merchandise solely by water; that their activities may give them their income lighterage; or they may be engaged in the sole business of forwarding goods, with no interest in the vessels or wagons on which they are transported. The foregoing are merely illustrations of activities which may perhaps be within the scope of the powers granted to the Commission by the act as found in the fifth section thereof.

"Imagination, however, cannot suggest such an extension of constitutional limitation as may justify the investigation undertaken by the Commission in this case. Indeed, so far as the matter has been brought to the attention of the court, no such assertion of power has ever been made to the courts. Investigation under subdivision (a) Section 6, is limited to corporations engaged in interstate commerce. The defendant is engaged in manufacture."

Company Is Upheld

In conclusion Judge Orr said:

"Counsel for the defendant urges upon this court the necessity of declaring Section 6 of the Trade Commission act to be unconstitutional, not only 'in so far as it authorizes investigations and compulsory disclosures

of matters which are beyond the commerce power of Congress,' but also 'in so far as it attempts to authorize a search or seizure by an administrative agency of the Government without charge or suspicion of wrong doing.' While the contention of counsel is probably sound, this court does not deem it necessary to go farther than to hold that the Commission has not the power to carry on an investigation which it has assumed in the present case.

"An incident of such investigation is the ascertainment of trade secrets. It is plain that the cost of manufacturing a patent product to which the manufacturer has the exclusive right may be a trade secret, a species of property of great value. This is also true of refinements of method in producing the same. The act prohibits the disclosure of trade secrets. The assumption that no such disclosure will be made disappears before the expressed intention to give the information to the Navy Department. We have, then, a contemplated search and seizure and a contemplated taking of private property for public use without due process of law, which are violative of the fourth and fifth amendments of the constitution.

"With respect to the third reason in support of the demurrer, little need be said. The act itself authorizes a petition for mandamus in aid of the Commission. 'Mandamus issues where, and only when, there is a right to demand, and a corresponding duty to perform, the act required' (19 Standard Encyclopedia of Procedure, 128.) It never was intended that the extent of a free man's duty to perform should be determined by those who demand performance.

"The demurrer must be overruled and the petition for a writ of mandamus must be refused."

The case will probably be carried to the Supreme Court of the United States.

Export Banking Corporation Legislation

WASHINGTON, Sept. 16.—An important step toward export financing has been taken in the passage by the Senate of the Edge bill authorizing the formation of corporations to do a foreign banking business under the supervision of the Federal Reserve Board. Early action is expected in the House and it is believed that before many weeks have passed corporations will be in process of formation under its provisions.

More straightout opposition probably will be in evidence in the House than in the Senate. The bill was passed by the Senate with a record vote after practically all the amendments proposed by Senators Gronna of North Dakota and Smoot of Utah, who had been most critical of the measure, had been adopted. With these amendments adopted, the opposition evaporated entirely and all elements united in praising the measure. In the House there will be opposition from members who are against any efforts to stimulate exports such as was evidenced in the rather formidable vote polled against the bill to permit national banks to invest 5 per cent of their capital and surplus in foreign financing corporations.

The amendments proposed by Senators Gronna and Smoot were accepted by Senator Edge with the single exception of imposing a double liability upon stockholders. He quoted a letter from W. P. G. Harding, governor of the Federal Reserve Board, expressing the belief that a double liability provision was unnecessary and that it would make it difficult to secure capital. Senator Edge, however, did not press the point and admitted that the double liability feature might make the debentures issued by the corporations proposed more attractive to investors.

Other amendments which were added included one that the corporations are to be taxed in the same manner as national banks; another that they will not be allowed to deal in foodstuffs or to dictate or prevent competition; another that they must pay up their full capital stock within a reasonable time after organization and another eliminating a cause giving exemption from the Clayton act.

The bill has the backing of the Treasury Department and the Federal Reserve Board and is the only

measure, besides the national bank 5 per cent investment measure dealing with the development of foreign trade, which has their indorsement.

Under its provisions corporations may be formed with a capital stock of not less than \$2,000,000. The corporation so organized shall have power under such rules and regulations as the Federal Reserve Board may prescribe to purchase, sell, discount and negotiate notes, drafts, checks, bills of exchange, acceptances including bankers' acceptances, cable transfers and other evidences of indebtedness, to purchase and sell securities, to accept bills or drafts drawn upon it, to issue letters of credit, to purchase and sell exchange, coin and bullion, to borrow and lend money on real or personal property, to receive deposits and generally to exercise such powers as are incidental to the powers conferred by the act. The corporation is authorized to establish and maintain branches in other countries.

The corporation is prohibited from carrying on any business in the United States except as incidental to its international or foreign business.

O. F. S.

"Training Courses in Safety and Hygiene in the Building Trades" is the subject of bulletin No. 31 issued by the Federal Board for Vocational Education, Washington. The bulletin is intended to form the basis of definite instruction in safety and hygiene as applied to the building trades. It is intended primarily for use in vocational schools but may be of use to employers who wish to promote safety methods and practices among their employees. Editions intended for teachers include suggestions for dividing the work into unit courses and adapting it to the various kinds of vocational classes.

An examination for metallurgist, at \$3,400 to \$3,600 a year, is announced by the United States Civil Service Commission. Applicants must have had a four years' high school course or equivalent and a bachelor's degree in the metallurgy of iron and steel; also a training and experience as specified in one of three groups. They must be capable of translating scientific French and scientific German. Applicants should apply for form 2118, stating the title of the examination desired.

Western Consumers Supplement Application

In Basing Point Controversy Cite Examples of Alleged Discrimination—Declare Present Practice Lessens Competition and Suggests Agreement

As briefly stated in THE IRON AGE, Sept. 11, the Western Association of Rolled Steel Consumers, through its attorneys, Miller, Starr, Brown, Packard & Peckham, Chicago, have filed for their clients, with the Federal Trade Commission, Washington, a supplemental statement in the matter of the application of the association for a complaint against the United States Steel Corporation and others, in their effort to have the Pittsburgh-Chicago freight rate eliminated from prices of steel manufactured in the Chicago district. The new statement rehearses much that has been said by the applicants to further their cause, cites several examples of alleged discrimination and declares that prior to the formation of the United States Steel Corporation "there was no practice of using Pittsburgh as a basing point on all iron and steel shipments." It is further declared that the present practice could only be successful when put into effect by agreement of the different producers. Following is an abstract from the supplemental statement:

That by reason of such discrimination, the Chicago fabricators and dealers in rolled steel products are put at a disadvantage as compared with the fabricators and dealers at Pittsburgh, and in the Pittsburgh district, in the competition for trade. For illustration, at each of the following cities of Illinois, to the following amounts:

	Amounts per 100 lb.
Streator and Peoria.....	7c.
Bloomington, Fulton, Galesburg and Quincy..	6c.
Springfield, East St. Louis, Centralia.....	5c.
Cairo and Johnston City.....	12c.

As to the district east of Chicago, and between Chicago and Pittsburgh: The Wisconsin Bridge & Iron Co., Milwaukee, Wis., 85 miles north of Chicago, and where the United States Steel Corporation has a rolling mill, is a fabricator of steel and a member of petitioner association, and is a competitor of a Detroit fabricator. By reason of such discrimination, the Wisconsin company, although located in such close proximity to the respondent's rolling mills, and a purchaser of steel produced at such mills, is put at a disadvantage over its Detroit competitor in business at Detroit, of \$5 to \$6 per ton and this is true with reference to the competitors of the Wisconsin company in Indiana, Illinois and elsewhere.

The Kewanee Boiler Co., Kewanee, Ill., by reason of such discrimination, is not only put at such a disadvantage over its competitors located in the Pittsburgh district in the competition for trade at points east of Indiana, as to substantially put it out of the competition; but at points in the Southwest, such as Tulsa, Oklahoma and Dallas, Tex., the manufacturer in the Pittsburgh district, although several hundred miles more distant, can make delivery in Tulsa, Okla., or Dallas, Tex., within a cent per pound of what it costs the Kewanee company.

McCord & Co., steel founders, Chicago, and a member of the petitioner association, has a Pittsburgh competitor, and both have customers for the trade with which they are competing at various points in Pennsylvania and in the East.

By reason of this discrimination McCord & Co., although it gets steel from the Chicago mills, is compelled to face a handicap of substantially \$10.80 per ton, represented by the freight rate from Pittsburgh to Chicago which is not earned, plus the freight upon its own product from Chicago to Pittsburgh, which is earned. Such freight from Pittsburgh to Chicago which is not earned is arbitrary and forms no part

of the proper price for the steel. On the other hand, the Pittsburgh competitor can compete with the McCord company for business in Chicago and the West without any such handicap and as if its factory or mill were at Chicago where the McCord mill is, because the Pittsburgh competitor, in competing for business at Chicago or in the Chicago district, purchases his steel at Pittsburgh without having to pay such unearned freight, and this handicap on the McCord company enables the Pittsburgh competitor to compete on an even keel in Chicago with McCord.

The Evan L. Reed Mfg. Co., a member of the petitioner association, is a manufacturer of bolts and rivets at Sterling, Ill., and by reason of such discrimination is compelled to pay for its rolled steel products at Chicago such price increased, as aforesaid, by the amount of the freight rate from Pittsburgh to Chicago as if it bought its steel at Pittsburgh. A competitor bolt and rivet concern in Ohio, more than 300 miles from the Chicago district in which the Reed company is situated and trades, can, by reason of such discrimination, manufacture and deliver in the Chicago district its product at less than the Reed company can, from its factory.

The Western Wheeled Scraper Co., a member of the petitioner association, manufactures in Chicago a dump car, which it sells in competition with competitors in the Pittsburgh district. The steel in each car costs the Western company \$54 more than it costs its Pittsburgh competitor. The Pittsburgh competitor can ship its products—its own cars—on their own wheels, to Chicago at mileage rates amounting to \$32.69, and can therefore deliver its product in Chicago \$21.31 per car cheaper than can the Western company, although the Western company buys its steel at Chicago. On the other hand the Western company, in order to compete in the Pittsburgh district, is put to the cost amounting to \$86.69 more than the Pittsburgh company.

The respondent, Inland Steel Co., quoted to H. C. Christman, of Detroit, a price for rolled steel of \$2.68 per cwt., f.o.b. Detroit, which is 260 miles from the seller's mill. At the same time it charged and exacted a price f.o.b. Chicago of \$2.72 per cwt.

What is above alleged as specific, concrete illustrations applies, *mutatis mutandis*, to the purchases of rolled sheet products and the trade and business of all the members of the applicant association as against and in favor of their competitors in the Pittsburgh or Eastern district. Like and divers other and different discriminations have been and are being made by respondents in sales to the members of applicant association.

By reason of which arbitrary increase of price by adding to the fair market price of rolled steel purchased by the members of the applicant association, the freight rate from Pittsburgh, or by making their sales on the f.o.b. Pittsburgh basis of steel manufactured at Gary, Chicago, or in that district, such members are unable to sell their product manufactured from such rolled steel in competition with Pittsburgh competitors, or competitors in the Pittsburgh, or Eastern district in the territory east of Gary, Ind., although they have had and rightfully should be permitted to have, and but for such discrimination in price could continue to have, a large and profitable trade therein. And while by such practice and discrimination in price such members of applicant association are excluded from the district east of Chicago, and confined to their own district, their Eastern competitors who are so thereby given their Eastern territory exclusively, are also placed upon an equal basis with such members of

applicant in the competition for trade in their own Chicago or Middle West district.

Says Practice Not Formerly Followed

Prior to the formation of the United States Steel Corporation and its absorption of the various competing producers of rolled steel, there was no practice of using Pittsburgh as a basing point on all iron and steel shipments, such as is now in existence, and herein complained of by the applicant association.

To whatever extent such Pittsburgh basis, or Pittsburgh as a basing point for iron and steel, was followed in the trade, prior to the formation of the United States Steel Corporation, it prevailed during the time and grew out of the fact that Pittsburgh was the principal manufacturing point for iron and steel, in and near which, and in that district substantially all the rolled iron and steel was produced which is no longer the case or fact.

That such Pittsburgh base was not, during that time adhered to, but manufacturers of rolled steel, at divers places, in the Pittsburgh district or tributary thereto, such as Buffalo, Phoenixville, Bethlehem, and Wheeling and along the Ohio River in Ohio and Kentucky and other places never observed the Pittsburgh base, but by the absorption of the freight rate, or otherwise, made the price to their customers so as to put those customers on as good a basis as competitors who were near Pittsburgh or as their own proximity to the consuming trade justified.

That during such time, manufacturers at Pittsburgh and in the Pittsburgh district, who used the Pittsburgh base, customarily, if such base were named, absorbed the freight to the purchaser's destination, or some portion thereof, as they might determine, in getting the order and fixing the prices.

That such practice of using the Pittsburgh base, during such time, did not apply to or include rolled steel manufacturers outside of such Pittsburgh district, or not near or tributary thereto. For instance, the rolled steel produced at Birmingham, Ala., was sold f.o.b. Birmingham; the rolled steel produced by the Colorado Fuel & Iron Co. was sold f.o.b. Pueblo, Colo., where its plants were; producers of rolled steel in or about Chicago and the Middle West sold to consumers at Chicago and in that district f.o.b. Chicago, or the purchaser's destination.

Manufacturers of rolled steel in the Pittsburgh district, for instance Jones & Laughlin, who are large producers of structural steel and steel used by fabricators, customarily sold their rolled steel products to customers in or about Chicago, or in that district, f.o.b. Chicago, and themselves absorbed the freight rate from Pittsburgh, or their mills, to Chicago.

Where Seller Absorbed the Freight

As illustrations of the allegations of this statement, the applicant association shows that the Jones & Laughlin Steel Co. in the fall of 1898 sold rolled steel products consisting of angles and bars to the Kenwood Bridge Co., located at Grand Crossing, in the city of Chicago, at a net price less the freight of 15c. per 100 lb., which was absorbed by the seller.

The Cleveland Rolling Mill Co., Cleveland, Ohio, in the fall of 1898, sold products of its rolling mill, consisting of angles, to the Kenwood Bridge Co., aforesaid, at a net price delivered Chicago, the seller absorbing and paying the freight of 12c. per 100 lb.

In the years 1897-1898 the Struthers Iron & Steel Co., Struthers, Ohio, sold to the Sykes Co., a fabricator in Chicago, its rolled steel products at net prices, the seller absorbing and paying the actual freight (or in some cases an amount as freight larger than the actual freight, amounting to a further reduction in the net price).

The New Philadelphia Iron & Steel Co., New Philadelphia, Ohio, in 1898 sold its rolled steel products to the Sykes Co., aforesaid, at net prices, the seller absorbing and paying the entire freight (or in some cases absorbing and paying a part of the freight).

In 1898-1899 the Cambridge Iron & Steel Co., Cambridge, Ohio, sold to the Sykes Co. aforesaid its

rolled steel products at mill price, less freight to Chicago, or less a large part of such freight.

From about Nov. 2, 1898 to Aug. 7, 1899, the Corning Steel Co., Hammond, near Chicago, sold its product to the Sykes Co., f.o.b. Chicago, there being 57 such sales. After Aug. 7, 1899, during that year it sold f.o.b. mill, there being thirty-nine orders or thereabouts.

In 1898 the Atlanta Steel & Tin Plate Co., Atlanta, Ind., sold its rolled steel products to the Sykes Co. at mill prices, less freight to Chicago.

In 1898 the Union Steel Co., St. Louis, Mo., sold to the Sykes Co. one order f.o.b. mill, and other orders at mill prices less freight to Chicago, the seller absorbing the freight.

In November and December, 1902, the Youngstown Iron, Sheet & Tube Co., Youngstown, Ohio, sold to Sykes Co. its rolled steel products at mill price, less freight to Chicago. In October and December, 1903, it sold the Sykes Co., f.o.b. Youngstown.

The American Sheet Steel Co. (which became a subsidiary of the United States Steel Corporation) after it absorbed the plant of the Corning Co. at Hammond, Ind., sold to the Sykes Co., in August, 1900, f.o.b. Hammond, and later it sold to the Sykes Co. such products from its Vandergrift-Apollo plant at Vandergrift, Pa., and from its Aetna-Standard plant, at mill price, less freight Pittsburgh to Chicago, and, in the latter part of that year, sold from its plants at Canton and Cambridge, Ohio; Muncie, Ind., and Vandergrift, Pa., at prices including the freight from Pittsburgh to Chicago, less the freight from mill to Chicago.

In other sales said sheet steel company sold the same customer from mills in Ohio, at a price which included the freight from Pittsburgh to Chicago diminished by the freight from the mill to Chicago.

In a sale from its mill at Scottsdale, Ohio, the price was f.o.b. mill. In shipments, from its mill at Canonsburg, Pa., it sold at prices including the freight to Chicago. In 1901, said sheet steel company sold said Sykes Co. from its Cambridge plant at a price less freight to Chicago of 15c. per 100 lb. In divers cases from its plant at Cambridge and other plants, it sold said Sykes Co., including in the price the freight from Pittsburgh to Chicago, where the actual freight on the shipment from place of shipment was materially less than the freight from Pittsburgh.

Other sales were made by said American Sheet Steel Co. to said Sykes Co. on like or other diverse and different bases during said year 1901, and until early in the year 1902.

That the supposed Pittsburgh base had no basis or reason for its existence in the trade, nor stability or uniformity, in its application, except to and among the producers of iron and steel in and about Pittsburgh, and to the trade and business of the mills there, which were all located in substantially the same or like proximity to or distance from consumers, and when the freight rate from mill to consumer was substantially or approximately the same. That the adoption and application of such basis could only be successful when put into effect by agreement of the different producers, which would be or result in the lessening of competition among such producers and which is in restraint of trade. That such an arrangement and practice by agreement or concert of the producers, and its consequent restraint of trade, could be reasonable and lawful, if at all, only where the competing trade is in a single place or district, and does not include producers widely separated, as are producers at Pittsburgh and in the East, and Chicago and the Middle West, and where the districts of large consumption and demand are also widely separated, and one of such districts is near or tributary to the rolling mills and supply of one set of producers, and another district of consumption and demand is in proximity or tributary to another and different place of production, as is the case with the Pittsburgh district and the Chicago and Middle West district.

Even prior to the formation of the Steel Corporation and of the other large combinations which were theretofore formed and absorbed by it, and while Pitts-

burgh and the Pittsburgh district contained by far the principal production of rolled steel products, and production outside of that district was very small by comparison, the Pittsburgh base was not adhered to, at least by mills as far from Pittsburgh as Buffalo, and could not be adhered to under strictly competitive conditions or without some agreement or concert. In fact, it was not adhered to with whatever agreement or concert there was or was attempted.

Much less, at the present time, when there has grown up the very large production of rolled steel and iron in Chicago and the Chicago district, at as low or lower cost than in the Pittsburgh district, and there is also a large and rapidly growing demand and consumption which is contiguous or near or tributary to said Middle Western rolling mills, can such Pittsburgh base be adhered to under competitive conditions or without the strong arm of combination.

Investigation of the Failure of a Cast-Steel Anchor

How Hard Interior Sections Were Caused by the Use of Charcoal on the Riser in a German Foundry

An interesting investigation of a cast-steel anchor was described in *Stahl und Eisen*, March 27, 1919. The anchor failed to pass the prescribed drop test of the German Lloyd—a drop of $3\frac{1}{2}$ meters (11.48 ft.) on a plate 500 mm. thick (19.7 in.), weighing 18 tons. Also the required tensile test was 56,890 to 78,220 lb. per sq. in., with 18 per cent elongation. The weight of the rough anchor with riser was 5 tons; the finished weight was 9040 lb.

The anchor was cast inclined in such a way that the end of the shank was about 4 in. below the horizontal. At this end there was an air pipe to remove the gases. The metal entered the casting through a large head or funnel $29\frac{1}{2}$ in. long, 11 $\frac{1}{2}$ in. high and 19 $\frac{1}{2}$ in. wide

place of fracture, shown in Fig. 1 as section 3. One-fourth of this section was polished and etched and showed very plainly a high carbon area near the center. The photomicrographs, Figs. 2 and 3, taken from this section near the edge and center, also show a marked difference in structure, with higher carbon steel near the center and this is confirmed by the chemical results, which were:

	Man-	Phos-	Sulphur,	Silicon,
	Carbon, Per cent	Manganese, Per cent	Per cent	Per cent
Edge	0.16	0.70	0.035	0.050
Center	0.40	0.65	0.040	0.052

This high carbon area in the center is obviously the

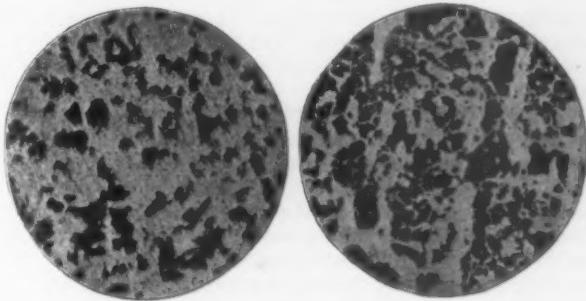
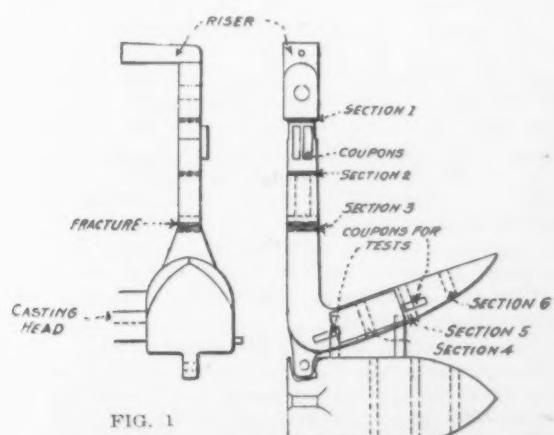


Fig. 1.—The Broken Anchor in Sections Showing Location of Fracture and Test Pieces. Figs. 2 and 3.—Photo micrographs of the edge and center of the fracture. Fig. 4.—High carbon area in section 4 of the anchor, as shown in Fig. 1.

at the junction of the fluke and shank. When the funnel was two-thirds full and the whole mold completely filled, the steel in the funnel was covered with fine wood charcoal, and then slowly filled with steel. After a short time it was again filled with hot steel from the same ladle.

After loosening the casting to avoid the formation of cracks it was allowed to stand for several days in the usual way and then annealed in accordance with general practice. On cutting off the casting head no pipe or defect could be seen and in general the casting showed no external flaw.

A section was cut from the broken anchor near the

cause of the failure and, in order to investigate this further, sections were cut from the anchor at the places marked 1 to 6 in Fig. 1. One of these is shown in Fig. 4 and is section No. 4. The higher carbon area is seen very plainly. The sections show that this high carbon area persists all through the anchor, but is least marked at the upper part of the shank where the microsections show the difference between edge and center to be slight. At section 2 it is quite marked, and the results at section 3 have already been given. Further chemical results are given in the table.

In some way, therefore, after the primary crystallization, the interior of still fluid steel has been raised

in carbon. A possible feeding of the casting with higher carbon metal is excluded because on that particular day no higher carbon steel was made. The phosphorus and

Chemical Analyses of Various Sections of the Anchor

Section	Carbon, Per cent	Manganese, Per cent	Phosphorus, Per cent	Sulphur, Per cent	Silicon, Per cent
1. Edge	0.12	0.67	0.048	0.058	0.41
2. Edge	0.14	0.67	0.048	0.058	0.41
3. Center	0.44	0.67	0.052	0.061	0.41
4. Edge	0.11	0.67	0.034	0.038	0.47
Center	0.43	0.68	0.052	0.062	0.42
5. Edge	0.11	0.68	0.036	0.038	0.46
Center	0.44	0.68	0.054	0.062	0.42
6. Edge	0.11	0.65	0.036	0.042	0.45
Center	0.43	0.68	0.051	0.058	0.43

sulphur contents show clearly that there is some segregation which would account for some rise in carbon, but not to the large extent shown by the analyses and microsections. The only remaining possibility is that either small particles of charcoal were carried down

into the interior of the casting which were sooner or later dissolved in the steel, or else the fluid steel in the casting head absorbed considerable carbon from the charcoal which was later absorbed by the casting, due to shrinkage, in the form of hard steel.

The conclusions reached are that the failure of the anchor was caused by a hard interior, due to covering the fluid metal in the casting head with finely divided charcoal. Part of this was either carried along with the liquid steel or else was dissolved in place. Such hard places are often found in large castings that are made with a feeding head, seen when the castings are machined and noticed by the difficulty in machining the place where the casting head is joined on. It is recommended that large massive castings such as the fluke of the anchor be made with several casting heads instead of one and, further, that the charcoal used to cover the metal be as coarse as possible to still get good heat insulation. In many cases the use of slag or similar material is to be preferred.

G. B. W.

MACROGRAPHY OF STEEL

Its Relation to Micrography—Effect of Various Elements and Impurities

An important article by Professor Le Chatelier on macrography as compared with the micrography of steel appeared in the issue of the *Revue de Metallurgie* for March. By means of various agents such as tincture of iodine, dilute sulphuric acid, Stead's cupric reagent and others, polished sections of steel may be treated and a structure, showing heterogeneity, seen by the naked eye. Such a structure is known as macroscopic in distinction to the finer structure revealed by the microscope after suitable attack and called microscopic. This macroscopic structure is not changed by subsequent heat treatment, and while the cause for the non-uniformity is not known it is generally attributed to impurities in the steel.

For many years the importance of this method of examination has been recognized. The quality of the steel seems to be in direct relation to the uniformity or otherwise of the structure shown after attack. It is, therefore, rather surprising that more research work has not been done to discover the cause for the structure. Mr. Stead has shown that the structure shown by his reagent is due to the presence of phosphorus. Professor Chatelier believes that the macrographic structure is due to oxygen remaining in solution in the solid metal.

The paper then describes in detail the method by which the samples were prepared and the solutions used. Two series of samples were employed, one made from electrolytic iron with various additions melted in magnesia or clay crucibles. All these samples were more or less oxidized due to the air having access to them. The other samples were melted in tubes of transparent silica in an atmosphere of hydrogen, the gas being very carefully purified. All the samples contained small amounts of silicon, the average being 0.01 per cent. Analyses are given of 18 of the samples. Four are pure iron, three of them contaminated with oxygen. Six contain iron and phosphorus with phosphorus varying from 0.122 to 0.644 per cent. Six contain iron and sulphur with sulphur from 0.036 to 1.19 per cent. One is pure iron with 0.15 per cent manganese, and the last is pure iron with 0.23 per cent silicon. All the samples were polished before being attacked by the various reagents and the paper, as printed in the *Revue de Metallurgie*, is illustrated by numerous photographs.

The conclusions reached by Professor Le Chatelier are as follows:

The only element that produces the chemical heterogeneity of annealed steels, or steels cooled slowly from their melting point, is oxygen, and nothing else in the absence of oxygen gives rise to the structure showing this heterogeneity. It has been known for a long time that oxygen exists in solution in the liquid metal as

FeO but it was thought that at the moment of solidification this oxygen separated from the metal partly as carbon-monoxide, giving rise to blowholes. In reality a part remains in solid solution but is not uniformly distributed, those parts of the steel freezing last being richest in oxygen. As in all similar solutions, the composition varies progressively from one point to another in such a way that the contours of separation between the parts richest in oxygen and those most free are not clear but shade off. It is not impossible that a part of the oxygen exists in some other form than oxide of iron; for instance, it may be found as a phosphate of iron or other compound of oxygen, phosphorus and iron.

When the percentage of oxide of iron is less than 0.01 per cent, Stead's cupric reagent does not attack the metal. For the percentages above 0.01 per cent the attack is progressively more active as there is more oxide of iron up to 0.10 per cent. When, on the other hand, the percentage is higher than 0.10 to 0.20 per cent the attack becomes less as the oxygen increases. For instance, highly oxidized metal from the open-hearth or converter, which has not received the final addition of manganese and silicon, is hardly attacked at all by Stead's reagent.

Stead's reagent colors by preference the purest parts or those least oxidized. In this respect it is different from all the other macrographic etching agents. The presence of oxygen in the steel facilitates the attack by these latter reagents although oxide of iron itself is not dissolved by them to any appreciable extent. There results a greater contrast between the parts unequally attacked, those strongly attacked becoming black because of the formation of a black deposit of oxide of iron.

The test with photographic paper known commonly as the sulphur print method indicates nothing but the presence of sulphur in the metal.

To sum up, Professor Le Chatelier says oxygen plays the same part in the macrostructure of steels that carbon does in the microstructure. As there exist reagents that by preference attack pearlite and others cementite, in the same way the cupric reagent attacks by preference those parts of the metal most free from oxygen, while the other reagents (double chloride of copper and ammonium, iodine, hydrochloric acid, etc.) do the opposite. In the absence of oxygen all the reagents studied merely show the crystalline heterogeneity.

G. B. W.

The Worthington Pump & Machinery Corporation has purchased the plant, patterns, accounts, patents and other assets of the Epping-Carpenter Pump Co., Pittsburgh. The plant will be operated as the Epping-Carpenter Works. Orders and contracts now in hand will be completed by the Worthington Pump & Machinery Corporation, and all further business will be for its account. Correspondence should be addressed to the Worthington company at the Epping-Carpenter Works, 10 Forty-third Street, Pittsburgh.

Chain Grate Bunker Shutter

A chain grate shutter device, designed for delivering ore, coal, or other material from bunkers, is manufactured by Edward Zublin & Co., Ltd., engineer, Zurich, Switzerland. The device can be used for filling receptacles of wire cable ways, large furnace tubs and for loading railroad trucks and ships. A feature of the new apparatus emphasized is that the opening of the bunker may be shut off by a separate slide and the chain grate removed without danger of the bunker running out. The advantages of this feature are pointed out as follows:

A chain grate which has gotten out of order may be replaced at any moment, whether the bunker is full or empty.

One and the same grate, if placed on wheels, may do service on a row of bunkers.

The operation of the chain grate shutter is thus explained: Supposing a horizontal plate is brought fairly closely under the bunker outlet, the material will run out only until a heap in the angle of repose has settled between outlet and horizontal plate and then stops, provided the horizontal plate reaches beyond the slope. If this horizontal plate is shifted forward, the heap is carried with it, setting free the outlet of the bunker and further material runs out until the heap again reaches up to the outlet and stops the outflow.

tionary motor driving a transmission, with which the chain grates are connected by a common belt.

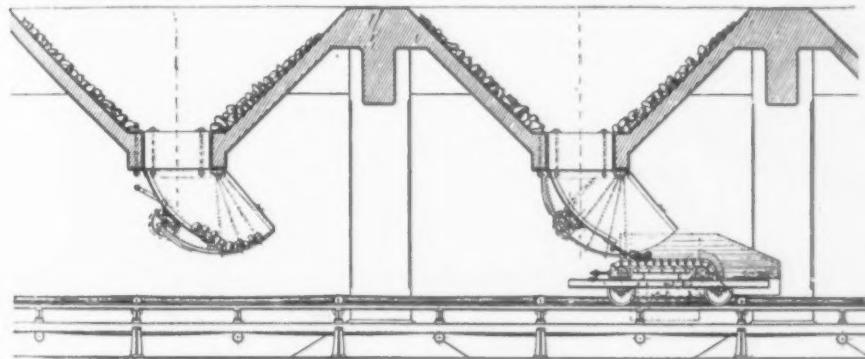
The chain grate may be constructed on wheels, to be shifted from bunker to bunker, the same considerations made with regard to the movable winches applying as to whether the fixed or the movable form is to be preferred. The manner in which the slide shutting off the bunker is placed in position, prior to the removal of the chain grate, is shown in an accompanying illustration.

The chain grate shutter adapted to a coke bunker and screen plant at Denain is shown in one of the accompanying illustrations. Each bunker outlet is fitted with a shutting slide and the chain grate and shaking screen are mounted on wheels to be shifted from bunker to bunker, chain grate and shaking screen forming one self-contained apparatus.

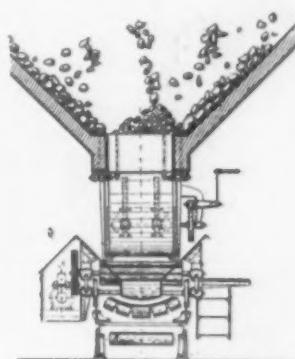
The Zublin company is represented in the United States until Oct. 8 by Dr. George Wettstein, who can be addressed in care of the Swiss Consulate, 100 Fifth Avenue, New York.

Further Reduction in Ocean Freights

WASHINGTON, Sept. 16.—Foreign exchange conditions, which have put a damper on export shipments, have caused the Shipping Board to make reductions in



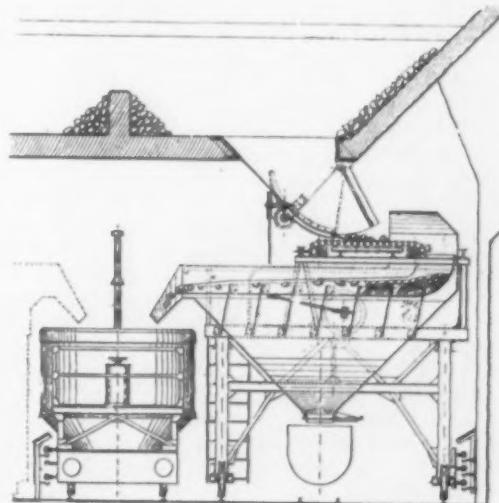
The Opening of This Bunker May Be Shut Off by a Separate Slide and the Chain Grate Removed Without Danger of the Bunker Running Out



At the Right Is Shown the Chain Grate Shutter Adapted to a Coke Bunker and Screen Plant

The horizontal plate being replaced by an endless belt passing over rollers, and the belt being set in motion, we get the same effect as with the plate. The material carried forward by the belt drops at the turning point, and the flow from the bunker continues as long as the belt is kept in motion, and is stopped immediately the motion of the belt ceases.

The chute fixed to the bunker outlet is formed by a curved bottom plate, the lower edge of which is in an almost vertical line with the upper edge of the outlet, and two side plates slantingly disposed so as to narrow the mouth of the chute to a width somewhat less than that of the belt. The lower part of the side plates is carried forward to the end of the belt to prevent the material dropping off at the sides. The belt consists of a chain grate—after which the shutter has been named—similar to the traveling grate used in modern boilers. The chain grate bars measure 100 mm. (4 in.) in width, and are so shaped that the edges permanently overlap even at the turning points, so that no material can drop through. The chain grate runs over two rollers and as the pressure of the ore in the bunker is borne by the curved bottom plate of the chute, only the weight of the run out material rests on the chain grate, so that the latter can be set in motion by a man single handed. To further regulate the outflow and render it uniform, a heavy iron plate is hinged to the upper edge of the outlet, which, while holding back the material to a certain extent, allows the larger lumps to pass under. The weight of this plate is adjusted to the specific gravity of the material stored in the bunker. The motive power is supplied by a sta-



ocean rates from United States north Atlantic ports to French and Dutch ports. Substantial cuts are made on a number of items as a means of stimulating business.

Among the rates are quoted \$1.50 per 100 lb. on boiler tubes and \$1.65 per 100 lb. on wire coils and rods to Havre, Bordeaux, St. Nazaire and Dunkirk. A rate of \$1.25 per 100 lb. is made on nickel to Antwerp and Rotterdam with boiler tubes listed as special.

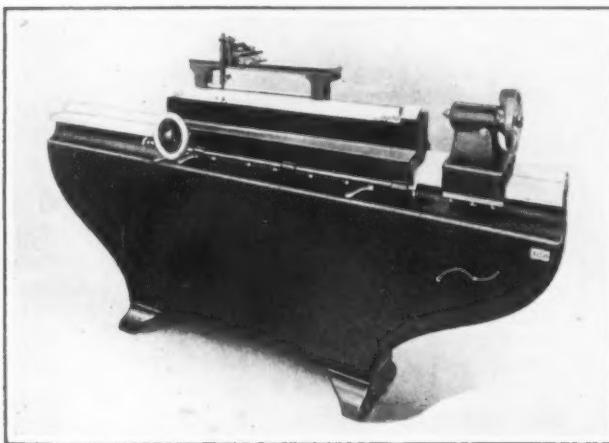
It is expected that other reductions will be made to different European ports.

In a revised tariff on shipments from the United States north Atlantic ports to north Africa, Turkey and Red Sea ports, iron and steel stowing up to 20 cu. ft. are given a rate of \$1.25 per 100 lb., while articles stowing from 20 to 40 cu. ft., are to pay \$1.75 per 100 lb.

New Type Measuring Machine

One of the most important problems in connection with the production of measuring devices is the accurate determination of their dimensions. For the purpose of making such measurements on a commercial scale the Taft-Peirce Mfg. Co., Woonsocket, R. I., has developed a machine for checking the dimensions of plug gages and similar tools.

In designing the machine precautions were taken to avoid inaccuracies that result even from slight strains. The mass was so distributed as to prevent local distortions, and the parts were made of such size that they change temperature very slowly. The measuring bar is of the same material as the majority of objects measured and therefore has the same coefficient of expansion. All measuring elements are located in one line which coincides with the axis of measurement thus to avert the multiplication of errors due to leverage. There are no sliding surfaces that enter into the measurements. The only oil film is that in the thread of the measuring screw and by a special design the



Accuracy of Measurement by This Machine Is Dependent Only on the Measuring Bar and the Measuring Screw

pressure on this surface is maintained uniform and the backlash of the screw is compensated. It is emphasized that the frame of the machine is rigid, not only on account of its mass but also on account of its depth as compared with its length, as it is 96 in. long, 41 in. high, and 9 in. wide. The total weight of the machine is approximately 2600 lb.

The measuring bar is of tool steel with $\frac{1}{8}$ -in. gold plugs inserted in its upper surface, the first four being $\frac{1}{4}$ in. apart and the remainder 1 in. apart. The whole surface of the bar, including the gold plugs, is lapped and cross lines are cut in the gold. The first four lines are spaced $\frac{1}{4}$ in. apart and the remainder 1 in. apart. The measuring screw has an extreme travel of only 0.30 in. and contains 40 threads per in. This is emphasized as making accurate measurements simpler with this screw than if a longer travel was used. The wheel is mounted directly on the screw and reads in 0.0001 in., each revolution having exactly the same value as in the ordinary micrometer caliper. It is graduated like the micrometer thimble except that the thousandths are subdivided into 10 parts. The vernier with which the wheel is equipped gives readings to 0.00001 in. The screw spindle and the nut are self-contained in a sleeve carried in a plain cylindrical hole in the head, the complete construction being designed to give accuracy of alignment.

The slide which carries the measuring bar is operated by a hand wheel for rapid and approximate movements and by knobs on the ends of the spindle for accurate adjustment. Once adjusted the slide is clamped to the bed of the machine by two lever clamps at the front. The measuring head can be located at any point on the bed so that it is not necessary to operate the slide always in one position. The measuring anvils are hardened tool steel, ground and lapped, and are located in a line $6\frac{1}{2}$ in. above the bed of the machine and coincident with the center lines in the measuring elements. The microscope is carried by a long rigid bracket mounted on ways on the back of the

machine. The microscope can be set at any position along the full length of the machine and reads on the bar directly in the line of measurement. It is equipped with lenses magnifying 100 diameters. A vertical illuminator reflects light upon the bar and a micrometer provides for accurate adjustment of the slide.

It is pointed out that the measuring bar is supported throughout its entire length and that the support for the bar is in turn supported throughout its entire length and that the surface of the measuring bar is in line with the line of measurement, thus to prevent an eccentric force causing an error in reading. Accuracy of measurement is dependent only on the measuring bar and the measuring screw, both of which can be checked independently of the machine.

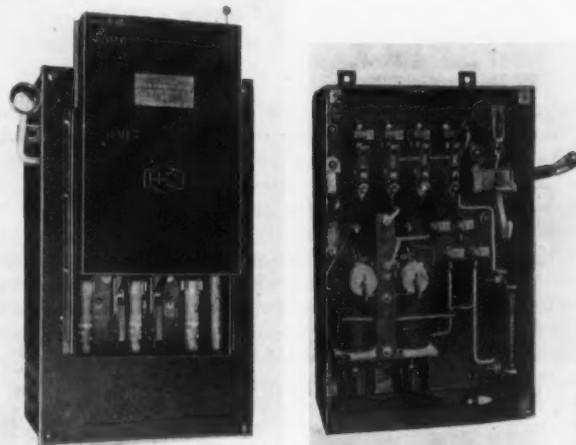
Inclosed Motor Starters

Two new inclosed motor starters designed for mines, coke and steel plants, and other industries where the proportion of unskilled labor is necessarily high, are being manufactured by the Cutler-Hammer Mfg. Co., Milwaukee.

All live parts of these switches are completely inclosed, and may be inspected by lowering a sliding panel. This operation opens the switch and the starter cannot be operated until the panel is in the closed position. An unskilled person can operate either type by a short radial movement of a lever projecting from the side of the inclosing case. The handles may be locked to prevent unauthorized operation. Contact posts and fingers are of the company's standard drum construction, and are pointed out as being easily inspected and renewed, also their vertical position prevents the accumulation of dirt and grease. The cases are arranged for conduit wiring.

A duplex overload relay and a low voltage release coil are provided with one starter, and are both inclosed with the switch. The overload unit has an inverse time element which permits a large initial starting current or a temporary overload but protects the motor from a continuous heavy overload. The switch is made with either three or four poles.

The other starter is fused and is especially adapted for those motors which cannot be connected directly to the line when starting. A resistor inclosed in the same casing with the switch decreases the initial voltage to 60 per cent or 75 per cent as desired, and maintains the balance of all three phases while starting. The fuses are out of the motor circuit until the rotor has reached normal speed; therefore they do not carry the heavy starting current and need be of no



Motor Starters with Live Parts Completely Inclosed. Lowering a sliding panel opens a switch, and the starter cannot be operated until the panel is closed. One starter is fused, the other is provided with a duplex overload relay and low voltage release coil.

greater capacity than proper protection requires. This starter contains a low voltage release coil. Both starters are made in various capacities for operating squirrel cage motors on potentials not exceeding 550 volts.

New Quick Change Chuck

A lathe chuck of the four-jaw independent type, designed particularly for use where it is desired to reverse the jaws quickly, has been brought out by the Dayton Reliance Tool & Mfg. Co., Dayton, Ohio. The jaws and screws of this chuck are removable at the same time. To reverse the jaw a plunger or locking pin that holds the screw in place is pulled out, releasing the screw,

and the screw and jaw still in mesh are slid out of the chuck body. Then the jaw and screw, after being reversed, are replaced, and the plunger is pushed back into place, locking automatically, and resulting in much saving of time in changing the jaws. Each screw has a square socket at each end for the operating wrench.

It is stated that the jaw can be reversed in 20 seconds. One or all can be reversed as desired. The danger of stripping the threads on the screws and jaws is eliminated by removing them simultaneously. In the same way the jaws and screws are removed for cleaning. A hardened and ground bushing is provided at the end of the plunger to take care of the backlash.

The chuck is furnished with a cast-iron, steel, or semi-steel body. The jaws are of high-carbon steel, carbonized and hardened. The four-jaw independent chuck is made in sizes from 8 to 18 in. inclusive. The chuck is also made with a two-jaw box body, and in two-jaw round, three-jaw universal, and three-jaw independent types.

Blast-Furnace Potash Recovery

WASHINGTON, Sept. 16.—Although the experts of the Bureau of Mines expect the recovery of only 1000 tons of potash as a blast-furnace by-product in the next two years, they estimate the total amount which might be secured from this source at 85,000 tons a year. A special report has been prepared on this subject by Arthur E. Wells, going into great detail concerning the work already done. It says:

Experiments have shown that if the furnace gases are treated by the Cottrell electrical precipitation apparatus, about 90 per cent. of the potash carried along in the dust, or as fume, in the gas stream can be collected in a product containing from 5 to 30 per cent total potash, of which 80 per cent. is readily water soluble. In other words, if the average charge contains 12 lb. of potash per ton of pig iron made, about 6 lb. of potash per ton can be recovered. With a higher potash content of charge, a higher percentage of extraction is possible.

At the plant of the American Manganese Mfg. Co., Dunbar, Pa., a Cottrell precipitation apparatus is now being installed, to be in operation soon, treating the gases from a 200-ton furnace. It is expected that there will be produced from one-half to three tons of potash per day, according to the character of the material in the charge, whether making pig iron or ferromanganese, in a product running about 20 per cent. water soluble potash, corresponding in grade to about that of the German manure salts imported before the war.

Another installation is being planned for the Lochiel furnace of Edward E. Marshall, near Harrisburg, Pa., and another at the plant of the Lavino Furnace Co., at Sheridan, Pa., where the potash contents of the charges are usually higher than the average. Investigations as to the possible potash recoveries are now being made at a plant located in the Birmingham district, where the potash content of the charge is higher than at the Northern plants.



Chuck Designed for Quick Reversal of the Jaws

The installation of a Cottrell precipitator is expensive at the present time, the Dunbar plant costing about \$70,000. An engineering company, which is in the business of installing the Cottrell cleaning system, is figuring on a possible 100 cleaning installations going over to that system within the next ten years. With an average production of 6 lb. of soluble potash per ton of pig iron, the production from these one-hundred installations would be in the neighborhood of 20,000 to 30,000 tons of potash per year, but as the installation will probably be made first at plants having a high potash charge, the amount which may be recovered from these installations would probably be greater, possibly 40,000 tons per year.

Will Build Wheel Plant

Joseph M. Crenan, president of the newly formed Reliance Wheel Co., Youngstown, Ohio, capitalized at \$100,000, announces that a five-acre site has been purchased and construction of a factory building will commence at once. The location is on the main line of the Erie and New York Central railroads, across from the plant of the General Fireproofing Co. Engineers are now making surveys of the property. The initial unit will be so constructed that it may be enlarged as business warrants. The company expects to begin producing double-disc pressed steel wheels within 90 days. It owns the patents under which the wheels will be manufactured. The patents are known as the Culp and Crenan patents and were developed by J. Stanley Culp and Mr. Crenan. Mr. Culp has been identified with some of the larger motor car builders as engineer and designer. Mr. Crenan was formerly engaged in the machine-tool manufacturing trade. Both will devote their entire attention to the production of Reliance wheels, for which large inquiries have already been received.

Steel Skid Legs for Elevating Truck Platforms

Steel skid legs designed for elevating truck platforms are being manufactured by the Lyon Metallic Mfg. Co., Aurora, Ill. The skid leg consists of two welded



Steel Channel Skid Legs Offered as Resisting Racking Strains Are Here Shown Tested with a Load of 14,000 Lb.

feet which are, in turn, welded to a steel channel. This channel is provided with bolt holes which are spaced so as to make it convenient to bolt to either wood or steel top. The channel construction is pointed out as resisting racking strains and the wide bearing as resisting lateral thrust.

A feature emphasized is that additional supplies of platforms may be carried in stock, knocked down, so that they take up very little space and yet are instantly accessible. The wooden cross pieces can be drilled to fit the skid leg, which is punched to a standard pattern. The platforms can be made any width as the cross pieces can be made any length practicable. The illustration shows a platform built with these legs supporting a test load of 14,000 lb.

Research Work of Bureau of Standards

WASHINGTON, Sept. 16.—The Bureau of Standards is to receive approximately \$425,000 for standardization work and technical investigations in connection with the industries of the country under the deficiency bill submitted to the House of Representatives by the Committee on Appropriations. The items are as follows: Industrial research, with a view to assisting in the permanent establishment of American industries developed during the war, \$250,000; testing Government materials to determine suitability for the specific uses involved, \$100,000; industrial safety of standards, \$25,000; standardization of instruments, machinery, and equipment, to enable the Bureau to co-operate with Government departments, engineers, and manufacturers, \$50,000.

Director Stratton, in his testimony before the committee, said in part: The need of co-operation with the industries has gone far beyond our expectation. We have also been surprised at the desire of the military departments to continue scientific work, in connection with their regular developments. If the Bureau continues and does its work well on those lines it will prevent their taking up and duplicating, at least, the scientific work of the Government.

There never was a time in the history of the country when the industries were in such great need of this work. They are introducing scientific methods. They are called upon to produce all sorts of equipment and all sorts of material, in many of which the fundamental and underlying investigations required are the same.

The war and navy departments are urgently in

need of information concerning light alloys used in aircraft construction, and also the alloy steels used in guns and armament. The importance of this investigation cannot be too strongly emphasized, and the funds placed at the Bureau's disposal should be governed only by its capacity to expand them properly. Again, the war brought out the importance of the alloys of aluminum. Aluminum used as such is not a strong metal, but mixed with other ingredients it becomes a useful alloy; as such it is used in all sorts of manufactures. We have developed many of those alloys. It is very interesting to see how steel, with just a little of tungsten or other material, becomes an entirely new substance as to properties; how the varying of the proportion of one of those ingredients will change its character altogether, and the time has come when we must know how to plan and design metals for particular purposes.

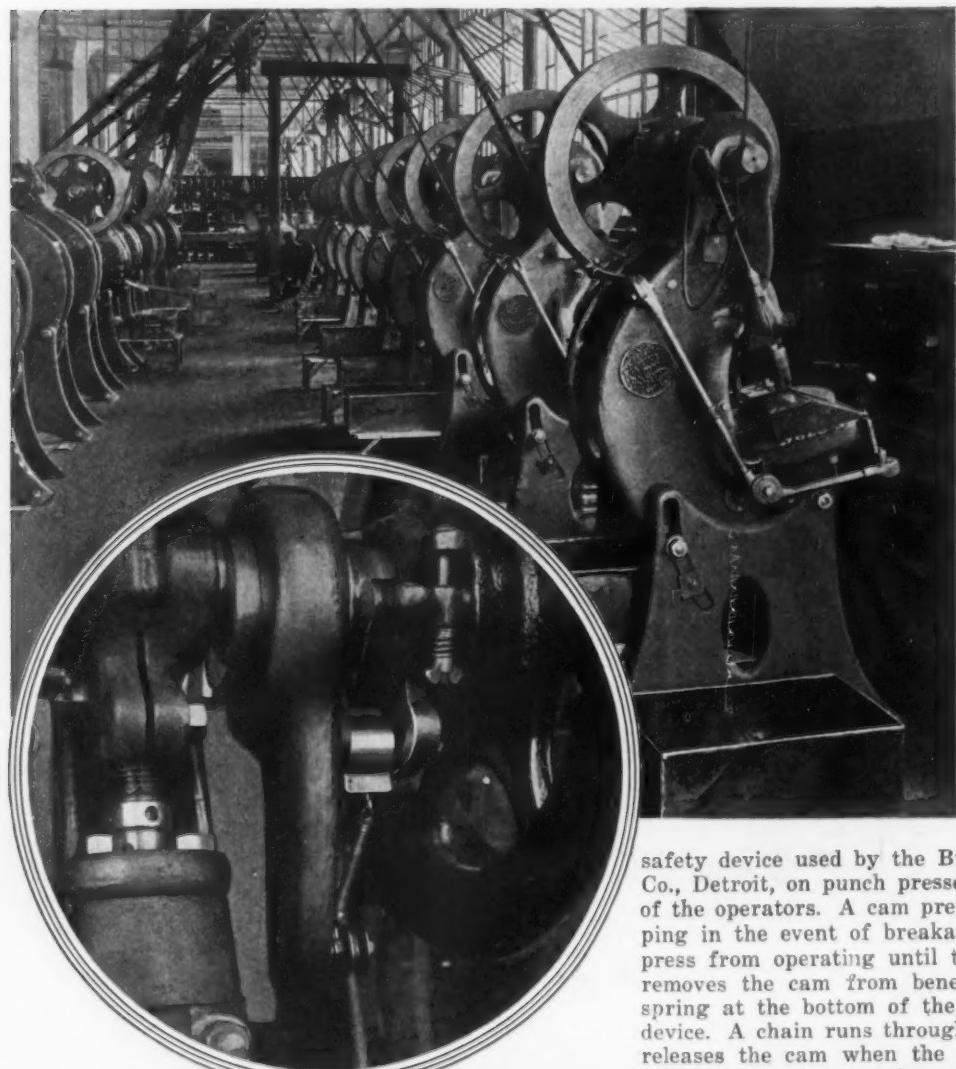
"Are the industries making demands on the Bureau to a greater extent than during the war?" asked Chairman Good.

"Yes. In cases of this kind the demands are 10 to 1. That is a most curious situation. The military demands are far greater than they were during the war because of the lessons that have been learned. During the war the industries were forced to do things in a different way than they did before; they had to get substitutes for many materials, and there has been a tremendous awakening as to the value of scientific work. The industries are willing to co-operate and for every dollar we put into it they will put in a thousand. They show a good spirit. There are certain things, however, in which we can lead the way, and it is economical to do it all in one place."

Director Stratton also told the committee of work to be done in investigating enameled ironware. He said: "The use of enameled ironware is growing rapidly, not only in utensils for ordinary household use, but for many purposes, such as sanitary ware, vats, and all sorts of receptacles used in the industries, and as a protecting coating against corrosion. There is an urgent demand for investigation regarding materials and processes used in enameling. During the war the fact was developed that the best enameled ware was manufactured abroad, and that for many purposes the imported enameled ware would alone suffice."

Safety Device on Punch Presses

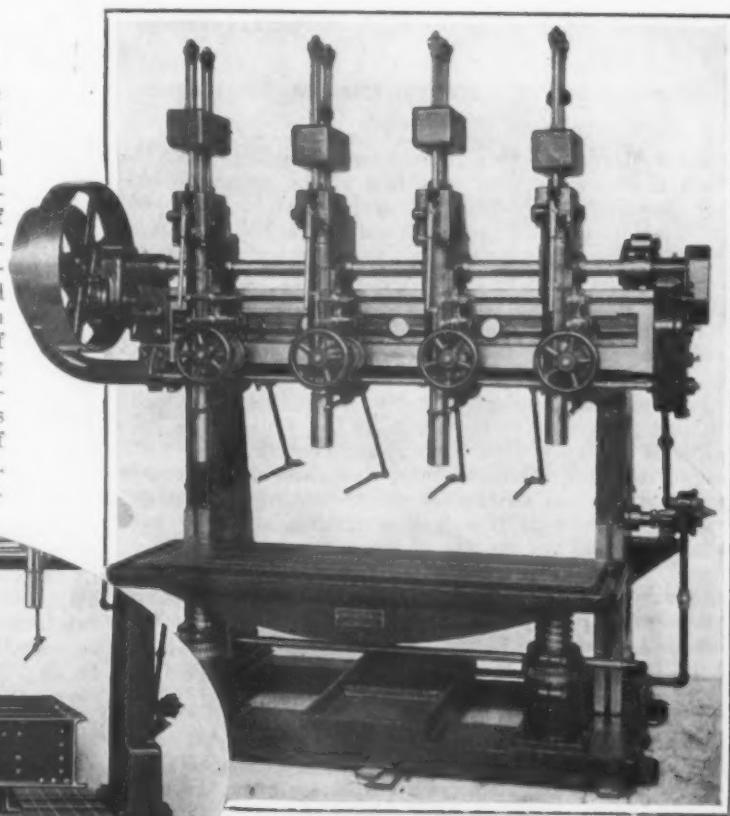
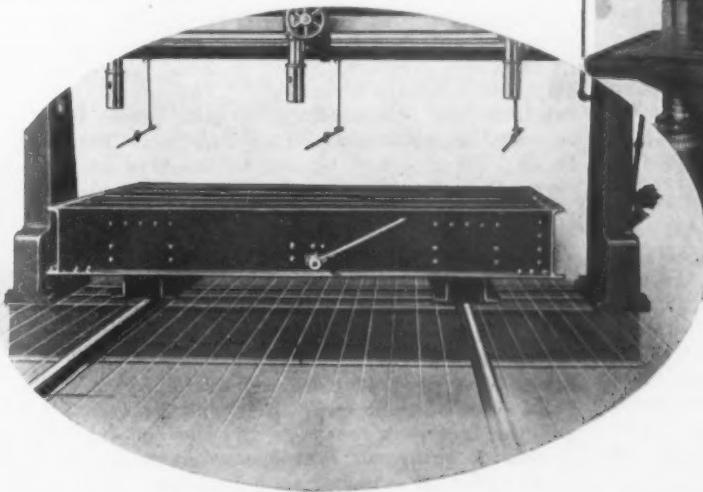
The accompanying illustration shows a new safety device used by the Burroughs Adding Machine Co., Detroit, on punch presses to safeguard the hands of the operators. A cam prevents the shoe from dropping in the event of breakage, and also prevents the press from operating until the lever is thrown which removes the cam from beneath the shoe. The small spring at the bottom of the cam restores the locking device. A chain runs through a pipe on the press and releases the cam when the operator moves the lever shown on the front of the press. With this attachment the operator must use both hands properly to operate the press. The device was designed by the Burroughs factory safety committee.



A Cam Prevents the Punch Press from Operating until the Operator Throws the Starting Lever. The cam is removed from beneath the shoe by a chain inclosed in a pipe, and is restored to position by a spring.

New Multiple-Spindle Drilling Machine

A new multiple-spindle drilling machine designed to use high-speed drills has been added to its line of multiple drills by Edwin Harrington, Son & Co., Inc., Seventeenth and Callowhill streets, Philadelphia. The illustration shows four spindles, but the number of spindles can be varied, and it is possible to connect adjacent heads to move along the cross-rail in pairs. Special frames can be furnished in different styles and tables can be supplied in several types. The truck table illustrated is of structural steel mounted on roller-bearing wheels to run in and out underneath the machine, and was designed for making flue holes in flanged heads of boilers. In use, the top of the truck table is usually covered with 2½-in. timber, into which the cutting tools may enter.



Three Sizes of This Drilling Machine Are Made to Drill Four 1-in., 1½-in. or 2-in. Holes at One Time. The number of spindles can be varied and special frames and tables can be supplied. The lathe at the left is mounted on roller bearings to run in and out underneath the machine.

The drive pulley on this machine will transmit 12 hp. Two similar machines are made with drive pulleys giving 15 hp. and 25 hp. This power, it is stated, will drive at one time in mild steel four 1-in. drills, four 1½-in. drills, and four 2-in. drills respectively, at practical speeds and feeds. Larger drills can be driven where all spindles are not working at one time or when finer feeds are used.

The spindle heads are mounted directly on the face of the cross-rail, on which they have independent lateral adjustment by a rack and hand-operated pinion and are clamped in position by bolts and a gib in the T-slot of the cross-rail. The spindles are equipped with ball bearings for drilling thrust and in the counterweight yoke. The counterweight has a vertical travel with constant effect in all positions. A clutch on the driving gear allows any spindle to be stopped independently. A pair each of bevel and spur gears transmits the power from the top shaft to each spindle. Mating gears are steel and bronze with stub teeth.

The feed has variations by a change pin or by constant center change gears and operates on all spindles at the same rate. Each spindle has a drop box to disengage the worm, operated by hand or by an automatic trip to stop the feed at any predetermined point. Quick vertical movement is provided for each spindle by a hand wheel.

The drive is by belt on a two-step cone pulley driving direct or through back gears, permitting four changes of spindle speed. With an adjustable speed motor a single pulley is used, with or without back gears, connected by belt to the motor mounted on an extension to the base. With a constant-speed motor the speed variations can be obtained by mounting the countershaft pulleys on an extension at the rear of the base, driving the shaft by a pair of spur gears from the motor which is located on the base just behind the table. Another but more expensive drive from a constant-speed motor is to connect it with a change gear box by silent chain and mount both on top of the machine.

The cross-rail is designed to resist torsion and de-

flection and is securely bolted to the uprights. The base is deeply ribbed and has a tank for cutting lubricant.

The table, when stationary, is supported on legs fastened to the base and uprights. For vertical adjustment, it is supported on two screws of large diameter directly under the line of spindles and having a long bearing in the pedestals fastened to the base. The table is raised by a hand crank, operating nuts through worm gearing, and when in position is rigidly clamped to the uprights. Other tables to slide, or to have sliding or compound tops, can be arranged to suit special conditions. A pump and distribution tank are arranged for a continuous supply of cutting lubricant through universally jointed outlet pipes.

Screw Thread Standardizing Progress

The National Screw Thread Commission, appointed under an act of Congress in May, 1918, has prepared a tentative report which will be made public shortly.

Before submitting its report the Commission thought it desirable to confer with Great Britain and France in an endeavor to find if the basis thus set forth would prove acceptable for a world standard. Unfortunately, some of the members, including the chairman, Dr. S. W. Stratton, were unable to go abroad. Alternates were named, and the Commission sailed July 13, returning Aug. 30. Conferences were held in both London and Paris with manufacturers interested in the subject. The members that made the trip abroad included E. C. Peck, Lt. Col., Ordnance Department, U. S. A., chairman of the commission, and representative of the army; F. O. Wells, vice-chairman, and L. D. Burlingame, both representing the A. S. M. E.; E. Buckingham and H. L. Horning, representing the S. A. E.; Major J. O. Johnson, representing the U. S. army; Commander L. B. McBride, representing the navy; H. C. Dickinson, representing the U. S. Department of Commerce; H. W. Pearce, representing the U. S. Bureau of Standards, and Lt. Robert Lacy, U. S. A. engineers, technical secretary.

HERBERT HOOVER, ENGINEER

Tribute to Herbert Hoover from an Engineering Viewpoint

An excerpt is given below from the speech of William L. Saunders, past president of the American Institute of Mining Engineers and chairman of the board of directors of the Ingersoll-Rand Co., at the Welcome Home Dinner given by the Society of Mining and Metallurgical Engineers to Herbert Hoover at the Waldorf-Astoria Hotel, New York, on the evening of Sept. 16. Mr. Saunders was chairman of the Society's committee and toastmaster at the dinner.

Here at last we have the example of an engineer who typifies the modern definition of engineering which is thus written in large letters on the wall of the engineer's library in New York: "Engineering, the art of organizing and directing men, and controlling forces and materials of nature for the benefit of the human race." How well this modest mining engineer has shown that he has the art of "organizing and directing men." Of the many thousands working for him, here and abroad, it is said that not only have they given him loyal support, not only are they glad to work for him, but every man of them would take off his coat and fight for him. How well he has shown his capacity for "controlling forces and materials of nature for the benefit of the human race."

This definition of engineering would have been amazing years ago. The civil engineer was then a surveyor, a mathematician and a bridge designer; the mechanical engineer an educated mechanic, a designer and draftsman; the electrical engineer was unknown outside of the school and the laboratory; while the mining engineer was a combination of the geologist and that kind of a chemist who could tell how much phosphorus there was in a steel rail. I make this statement with apologies to Alexander Holley, who in his day was the one and only mining engineer known beyond the fence of the work shop or mine.

The Engineer's True Place

But the engineer is at last coming into his own. We see the dawn of a new day; truly there is a new order of things. The great centers of the world are now industrial centers. The prosperity and strength of nations in peace and war rest now upon the factory system, the shops, the railroads and steamships, the mines, the smelters and the public works. And who is responsible for this? Who plans and executes these things? It is the engineer—civil, mining, electrical, mechanical, chemical and automotive. Such captains of industry are by education and experience best fitted to steer the ship of state. The place for the engineer is not in the dark confines of the hold below, but on the upper deck—yes, on the bridge.

We are told that practically all the executive heads of the organization for the relief of Belgium were engineers. Who like an engineer is as well trained by education and experience to meet emergencies? He must be prepared for extraordinary conditions. He must foresee these conditions and be ready to act quickly. A mine manager—usually a mining engineer—when told that a pump has broken down in the mine, cannot wait for the common remedies, but must provide in advance for experts and appliances to be on the spot at once and cure the trouble promptly. Is not this the one thing above all others which enabled America to play so important a part in the war? Was it not the spirit of the engineer, his capacity to do things and do them quickly? Surely the war was not won by money, for the enemy was never financially embarrassed. I think we shall all agree that the basic strength of the Allies throughout the war was in the never-dying morale of all the people, including the armies, arraigned against Germany. But what would this strength have availed us but for the resources behind the lines? Modern war resources are mainly coal and iron and the capacity to put these things to practical use on a large scale. The mines would avail but little for the works and the works might avail little but for the men—the engineers who direct them on

modern, scientific lines of high efficiency. Mr. Hoover during the war gave me the first insight into the Battle of the Marne, when he told me that even the Germans underestimated by twenty per cent the volume of munitions required in a modern battle. They drew away too fast from adequate supplies.

How America Saved the World

And so America, through its engineering and industrial strength, helped to save the world from calamity. Now what individual best exemplifies this? Food played an important part in the war. We have heard the cry that food will win the war. Surely without food no war could be won. It was Mr. Hoover who took care that there should be no food shortage. He did more—he taught thrift to millions of people in all walks of life and in all parts of the world.

Foreign Demand for Our Fabricated Ships

WASHINGTON, Sept. 16.—The Shipping Board has given its approval to a plan of the Submarine Boat Corporation, Newark, N. J., to build four fabricated ships for an Italian company. The vessels are to be fabricated in this country, shipped across the ocean in sections and assembled at Palermo. They are to be of 5350 tons and similar to the type built by the corporation for the Shipping Board. As the Newark plant is operated by the board, it was necessary to obtain official sanction for acceptance of the foreign order. Henry R. Sutphen, vice-president of the corporation, will sail for Italy next week to confer with the Italian company. The announcement of the Shipping Board made the following comment:

There is a world shortage of ships. Many nations are in dire need of more tonnage and would like to build ships of their own. It is this demand for ships, and the fact that the parts can now be fabricated in American shipyards, transported abroad and there assembled at a less cost than they can be built under the old method, which makes it apparent that this new industry is likely to undergo a great expansion, with the consequent stimulation of manufacture in many sections of the country. The Submarine Boat Corporation, which only two years ago located its plant on a New Jersey meadow, has delivered 60 vessels to the Shipping Board, and launched a total of 75. This is the company which in April of this year, and when estimates for ship construction were ranging as high as \$225 per deadweight ton, made Newark Bay famous by an offer which it made to the Shipping Board to build 12,000-ton freighters at a flat price of \$149 per ton. President H. R. Carse explained that this offer was made possible through the larger economy in production due to standardization and fabricated parts.

This Government shipyard employs about 12,000 men. But scattered among the many bridge and structural plants and machine shops of the country are upward of 30,000 men employed in work intended for this yard. This diffusion avoids housing problems, and labor unrest in one section of the country might not affect other sections. The localities from which fabricated parts are supplied to the Newark Bay yard are Milwaukee, Mount Vernon, Ohio, Decatur, Ill., Chicago, Pittsburgh, Louisville, Buffalo, Boston, Philadelphia and Syracuse.

Boston Jobbers Buy New Warehouse

Butts & Ordway, 33 Purchase Street, Boston, iron and steel jobbers, have purchased the property of the Penn Metal Co., off South Hampton Street, Roxbury, Mass., which they expect to occupy about Jan. 1 as a warehouse. The building is one story, 100 x 240 ft., with a spur trackage of the New Haven Railroad of 250 ft. It will be used as a receiving and shipment station for iron, steel, bolts, nuts, horseshoes, nails and any other goods bought in carload lots. In connection therewith a garage will shelter the company's cars and trucks with the exception of those of the salesmen. The firm has other plans of expansion to be announced later.

Nationwide Strike Is Not Probable

Conservative Labor Leaders Favor Postponement

Wm. Z. Foster, Secretary-Treasurer of Committee on Organization and Co-Author of Pamphlet Advocating Extreme Measures of Lawlessness, Still at Work on Plans for Carrying on the Strike—Evidence of Revolutionary Propaganda Placed in the Hands of President Gompers at Washington

As THE IRON AGE goes to press (Wednesday) a meeting of the national committee for organizing iron and steel workers is being held at Pittsburgh. It was reported Tuesday and denied that President Gompers had taken action to prevent the strike. This was probably a technical denial. While Mr. Gompers has no official power to stop the strike, there seems to be no doubt that he is using his influence to postpone it until after the Washington conference, and it is known that his influence is very great. Hence it is probable that the strike will be postponed.

President Tighe of the Amalgamated Association of Iron, Steel and Tin Workers states that even if the strike is called his organization will strictly observe scale contracts made with bar iron mills and sheet and tinplate mills which do not expire until June 30, 1920. He says, however, that thousands of men now working in non-union mills have joined the Amalgamated Association since the strike movement started. This statement has not been verified. Foster and other members of the national committee are expected to make a last desperate effort against postponement of the strike, but it does not seem likely that their wishes will prevail. It is believed at Pittsburgh that they are afraid to submit their case to the conference at Washington on October 6. He and his associates in the little office in Pittsburgh continued their distribution of strike documents after the report of Gompers's interference was circulated. One of them, Fitzpatrick, was quoted as saying that the strike could not be stopped.

VENTS in regard to the threatened strike of steel workers throughout the union have come in quick succession during the past ten days.

After the steel strike order was issued, one of the editors of THE IRON AGE went to Pittsburgh to investigate conditions and his report, including liberal extracts from the *Syndicalist* pamphlet, will be found on following pages of this issue. It was evident to him that at least one man, who has been most prominent in making arrangements for the strike, Foster, has also been an advocate of extreme Syndicalist and revolutionary doctrines. Abundant evidence of that fact was obtained. Mr. Foster was asked about it and did not deny the substantial accuracy of most of the charges made against him. Evidence was taken to Washington Sunday by the editor and presented to Mr. Gompers's secretary, Mr. Gompers being absent in New York attending the funeral of his father. With all the facts before him, Mr. Gompers was given an opportunity by THE IRON AGE not only to use his influence to stop the strike but to take a stand which would for all time be to his credit and show him to be an uncompromising opponent of violence and other revolutionary methods.

As stated in THE IRON AGE last week, President Wilson, in the telegram sent him Sept. 5 by Samuel Gompers, president of the American Federation of Labor, was asked to say whether a conference with the Steel Corporation could be arranged before Tuesday, Sept. 9, when the presidents of the 24 international unions were to meet in Washington to take such action as they might deem necessary. The contents of President Wilson's telegram in reply to Mr. Gompers was not made public, but after an all-day session Tuesday, the steel workers' committee sent the following telegram to President Wilson in a final effort to secure through him a meeting with the Steel Corporation:

"Secretary Tumulty's telegram of Sept. 5 to Samuel Gompers was read to-day at a meeting of the presidents of

the 24 international unions in the steel industry and given the most careful consideration.

"After long and earnest discussion the undersigned were instructed to wire you requesting a more definite statement as to possibility of an early conference being arranged by your efforts between the heads of the United States Steel Corporation and of the unions involved. The conditions in the industry are steadily growing worse, with large numbers of union men being discharged and otherwise discriminated against, and it will be impossible to hold our men much longer from defending themselves by striking unless some genuine relief is vouchsafed them. Our meeting will remain in session 48 hours awaiting your reply before taking final action."

Through his secretary, Mr. Tumulty, President Wilson telegraphed President Gompers asking him to have the strike postponed until after the White House industrial conference. The strikers' committee claims that this telegram was not received until after it had issued the following statement:

"The steel workers' unions, having exhausted every honorable and possible means of securing a conference with the United States Steel Corporation for the purpose of discussing the intolerable and brutal conditions under which men are compelled to work, and having failed in these efforts, have decided by unanimous vote to cease work Monday, Sept. 22.

"The representatives of these international unions have for the last four months tried every conceivable means to secure a conference with Judge Gary, representing the United States Steel Corporation. A personal letter from President Gompers to Judge Gary was totally ignored. Later on a committee waited upon Judge Gary in New York and was refused an audience. Subsequently they were advised through a letter signed by Judge Gary that he would not deal with union labor representatives, which is an absolute denial to his employees of the right of collective bargaining.

"The executive council of the American Federation of Labor brought the situation to the chief executive of this nation, President Wilson, for the purpose of securing his co-operation in arranging a conference. Up until the present time the committee has not been advised that the efforts of the President have been any more successful than the efforts of President Gompers and the committee representing the employees.

"While we were engaged in these efforts the most un-American, outrageous and unlawful tactics were employed to destroy our unions. In western Pennsylvania we were denied the rights of free speech and free assembly. Owners of

meeting places were prevented from permitting our gathering in their halls and street meetings were broken up under the pretext that we did not have permits for the same, in spite of the fact that it was impossible to secure such permits from the steel mill town officials, who are owned body and soul by the steel interests. Our organizers have been jailed and fined for attempting to address our members. Our meetings have been picketed by hundreds of gunmen, thugs and company officials in an effort to browbeat and intimidate the workers from meeting together to discuss their grievances. Thousands of our members have been discharged for no other reason than having become members of our union.

"All of this, with the cold-blooded and brutal murder of seven of our organizers by steel mill guards and professional gunmen during the past few days, have made it impossible to restrain the employees any longer. In view of the stubborn and uncompromising attitude of the steel trust officials, there is no alternative left to the committee except to comply with the demands of the steel workers for relief and to declare a strike to become effective Monday, Sept. 22."

The Strike Order

In accordance with the decision of the committee the formal strike order was issued as follows, being published in a number of languages and widely distributed:

STRIKE SEPTEMBER 22, 1919

The workers in the iron and steel mills and blast furnaces, not working under union agreements, are re-

quested not to go to work on Sept. 22, and to refuse to resume their employment until such time as the demands of the organizations have been conceded by the steel corporations.

The union committees have tried to arrange conferences with the heads of the steel companies in order that they might present our legitimate demands for the right of collective bargaining, higher wages, shorter hours, and better working conditions. But the employers have steadfastly refused to meet them. It therefore becomes our duty to support the committee's claims, in accordance with the practically unanimous strike vote, by refusing to work in the mills on or after Sept. 22 until such time as our just demands have been granted. And in our stoppage of work let there be no violence. The American Federation of Labor has won all its great progress by peaceful and legal methods.

IRON AND STEEL WORKERS! A historic decision confronts us. If we will but stand together now like men our demands will soon be granted and a golden era of prosperity will open for us in the steel industry. But if we falter and fail to act this great effort will be lost, and we will sink back into a miserable and hopeless serfdom. The welfare of our wives and children is at stake. Now is the time to insist upon our rights as human beings.

STOP WORK SEPT. 22.

NATIONAL COMMITTEE FOR ORGANIZING IRON AND STEEL WORKERS.

Conditions at Pittsburgh—The Syndicalist

BY GEORGE SMART

PITTSBURGH, Sept. 13.—To permit the strikes of workers in the iron and steel mills and blast furnaces to be inaugurated as proposed by a small band of agitators would be a crime against civilization. It would disgrace the American Federation of Labor for all time, because incalculable damage, not only to iron, steel, machinery, railroad and many allied interests, but also to the strikers themselves, many of whom hate the unions with an intensity that cannot be appreciated unless one has been in touch with the working people in Pittsburgh or other important labor centers.

The policy of the steel companies has been one of silence. Newspaper men, eager for information, have been given the cold shoulder. Even from as far as New York trained news writers, men of character and intelligence, have come here to get at the facts, but have received almost no encouragement from the steel companies. Is it any wonder, then, that these men have gone away without the kindest feeling toward the companies and have published articles which in some cases have not disclosed the true situation? This policy was illustrated in a talk which I had with the general manager of one of the large independent steel companies, yesterday. He said:

"We have too high an opinion of our men to believe for one moment that they will be influenced by the noisy agitators, who are trying to disturb industrial conditions."

It is undoubtedly true that many men who work in the plants see through the sophistry and deception which is being practised by the so-called "union organizers". But it is never wise for one to underestimate the strength of opposing forces and I am confident that today neither steel company executives nor union officials have any definite idea how many men they can depend upon in the event of an industrial struggle. It is probably true that fairly accurate estimates as to union membership can be made. The real question is,

how many men who are nominally members of unions can be depended upon to stand by the union and on the other hand, how many men who mean well, but, as Roosevelt used to say, "Mean well feebly", can be depended upon to stand by their jobs and defy intimidation? I heard the other day of a roller who had been working for about \$25 a day and who had gone on a vacation to Maine. On his return trip a fellow passenger on the train discussed the outlook for a general strike and asked him what he would do in the event of such a catastrophe. "Oh," he said, "I'll go back to Maine for a while". Men like that would not be of much use in time of trouble.

Some Plain Facts

Whether the policy of silence on the part of the steel companies has been wise or not, in the past, the time for telling a few plain truths about the present situation has arrived. I was a visitor yesterday at a little office in the Magee Building, this city, on the door of which are printed these words:

NATIONAL COMMITTEE
FOR ORGANIZING IRON AND STEEL WORKERS
JOHN FITZPATRICK, CHAIRMAN,
CHICAGO, ILL.
OFFICE OF
WILLIAM Z. FOSTER
SECRETARY-TREASURER

where a few agitators hope to disturb a mighty industry. In the office were two or three roll top desks, a couple of typewriters, two or three clerks and stenographers, Fitzpatrick, "Mother" Jones, and the central figure of the present agitation, William Z. Foster. Fitzpatrick, whose face indicates that he belongs to the rough and tumble type of agitator, soon departed and I did not have the pleasure of talking with him. Foster is of a different type and to my mind is much more dangerous. He is about forty years of age, I should imagine, not vigorous physically and speaks usually

in a low voice. He impresses one as being anything but a noisy agitator and for that very reason is likely to be more effective than some fellows who talk in a loud tone.

Charges Against Foster

I said to Foster that I understood he was the man who, at the meeting of the American Federation of Labor in St. Paul, in 1918, introduced a resolution providing for organization of the steel workers and that since he had been in charge of the organizing campaign; that at one time he was an active organizer of the I. W. W. and in 1911 was sent to Europe by that organization and spent much time in France, Germany and Austria-Hungary, mingling with radical laborites; that he was one of the authors of a book on "Syndicalism"; that he appeared at Budapest, Hungary, in August, 1911, and attacked the credentials of James Duncan, first vice-president of the American Federation of Labor, as a delegate of the trade unions of the United States, making a vigorous effort to obtain a seat in the convention on the representation that the I. W. W. was the labor organization of the United States; that during his stay in Europe he was a regular contributor of *Solidarity*, the organ of the I. W. W., and after returning to the United States became a candidate for editor of *Solidarity*; that failing in his ambition, he announced that he would no longer remain in the I. W. W. but would join the A. F. of L. and "bore from within"—that is get into the stronger organization and inoculate it with his theories.

Foster's Reply

Charges of such a serious nature would arouse the ordinary individual to a state of burning indignation, but William Z. Foster is not an ordinary individual. He showed indication of special

Revolution by General Strike

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

In his choice of weapons to fight his capitalist enemies, the Syndicalist is no more careful to select those that are "fair," "just" or "civilized" than is a householder attacked in the night by a burglar. He knows he is engaged in a life and death struggle with an absolutely lawless and unscrupulous enemy, and considers his tactics only from the standpoint of their effectiveness. With him the end justifies the means. Whether his tactics be "legal" and "moral" or not, does not concern him, so long as they are effective. He knows that the laws, as well as the current code of morals, are made by his mortal enemies, and considers himself about as much bound by them as a householder would himself by regulations regarding burglary adopted by an association of house-breakers. Consequently, he ignores them insofar as he is able and it suits his purposes. He proposes to develop, regardless of capitalist conceptions of "legality," "fairness," "right," etc., a greater power than his capitalist enemies have; and then to wrest from him by force the industries they have stolen from him by force and duplicity, and to put an end forever to the wages system. He proposes to bring about the revolution by the general strike.

Bloodshed Probably Not to Be Avoided

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

Bloodshed—Another favorite objection of ultra legal and peaceful Socialists is that the general strike would cause bloodshed.

This is probably true, as every great strike is accompanied by violence. Every forward pace humanity has taken has been gained at the cost of untold suffering and loss of life, and the accomplishment of the revolution will probably be no exception. But the prospect of bloodshed does not frighten the Syndicalist worker, as it does the parlor Socialist. He is too much accustomed to risking himself in the murderous industries and on the hellish battlefields in the niggardly service of his masters, to set much value on his life. He will gladly risk it once, if necessary, in his own behalf. He has no sentimental regards for what may happen to his enemies during the general strike. He leaves them to worry over that detail.

The Syndicalist knows that the general strike will be a success, and the timid fears of its opponents will never turn him from it, any more than will their arguments that it is an "illegal," "unfair" and "uncivilized" weapon.

interest and refused to take the matter seriously. "Some of those things," he said, "are true and some are not—anyhow, that book to which you refer was published a number of years ago and the important point is, not whether I have done this, or that, in the past, but have I today the absolute confidence of Samuel Gompers? I say to you Gompers looks only to results. He knows me. He knows what I have accomplished, especially in the stock yards organization in Chicago. He trusts me and that is enough."

The book entitled "Syndicalism," printed with a red cover, consists of 43 pages and on the front cover the authors are given as Earl C. Ford and William Z. Foster and the publisher is stated to be William Z. Foster, 1000 South Paulina Street, Chicago. In the last paragraph of the book these words are found:

"All workingmen interested in this movement, to place the American Labor movement upon a Syndicalist basis, can secure full information regarding the S. L. of N. A. by communicating with"—Foster's address is then given as above.

In order fully to realize how horrible are the teachings of this book, one must read it through. But some of the extracts published in connection with this article will give a fair idea of the frightful contents.

Foster at Budapest

Before dismissing Mr. Foster, I wish to add a few words about the meeting at Budapest as reported by James Duncan, first vice-president of the American Federation of Labor, who submitted a report at the meeting of the Federation held at Atlanta, Ga. Mr. Duncan stated that Foster had made certain "lurid and unwarranted statements" as to representing a labor organization in America and a motion was then made that the International Workers of the World be not admitted to affiliation

"Brazen and Gigantic Robbery"

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

The wages system of robbery is responsible for the great extremes of poverty and wealth to be found in modern society. It has existed ever since the very beginning of industrialism and its effects grow worse daily. Every invention of a labor-saving device, by increasing the army of the unemployed and making the competition for jobs keener, enables the owners of the industries to more thoroughly exploit their slaves. Thus the wages system has the effect of making inventions of labor-saving devices curses to the bulk of society, instead of blessings as they should be.

The Revolution.—The wages system is the most brazen and gigantic robbery ever perpetrated since the world began. So disastrous are its consequences on the vast armies of slaves within its toils that it is threatening the very existence of society. If society is even to be perpetuated—to say nothing of being organized upon an equitable basis—the wages system must be abolished. The thieves at present in control of the industries must be stripped of their booty, and society so reorganized that every individual shall have free access to the social means of production. This social reorganization will be a revolution. Only after such a revolution will the great inequalities of modern society disappear.

in the International Secretariat as a national trade union center. Continuing, Mr. Duncan says:

"During the discussion on the motion, misguided Foster lost control of his temper and gave the convention ocular demonstration of what an I. W. W. really is. His language was foul, vulgar and vehement. He even threatened assault, and subsided only to prevent expulsion from the room."

Then Foster, according to Mr. Duncan, continued his attack upon the American Federation of Labor and his advocacy of the I. W. W. but Foster was voted down. He was not, however, easily suppressed and after a lapse of a few years he appears as the leading spirit of the general strike of iron and steel workers in co-operation

Will Overthrow Capitalism

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

The Goal of Syndicalism.—The Syndicalist movement is a labor union movement, which, in addition to fighting the every-day battles of the working class, intends to overthrow capitalism and reorganize society in such a manner that exploitation of man by man through the wages system shall cease. The latter phase of this triple task—the establishment of a society worthy of the human race—is the real goal of *Syndicalism* and the end for which all its efforts are finally spent. Consequently, an understanding of the manner in which the new society shall be organized is a matter of first importance to Syndicalists and they have given it much thought.

with the American Federation of Labor and 24 of its subsidiary unions.

"Mother" Jones's Radicalism

A few words about "Mother" Jones, to whom Mr. Foster introduced me. She is a motherly looking woman, of apparently about 70 years, but she said to me that she is 89 and if this is true, she is remarkably well preserved. She told me at great length of the struggles of the working people and of how she had helped them in a personal way, by ministering to the suffering. Far be it from me to question her sincerity. I am strongly inclined to the opinion that she has brought herself to believe in the doctrines which she has preached throughout the length and breadth of this land. Nevertheless, her doctrines are dangerous and are helping to fan the fires of discontent, hatred and lawlessness. When I asked her how she accounted for the fact that the savings of workers in the banks of Youngstown, Ohio, amount to \$41,000,000 or \$400 for every man, woman and child in the city—she said she did not believe it. When I asked her how the Rockefeller plan of co-operation was getting on in Colorado she said "Not at all, how can you co-operate with robbers?" A little later, however, she admitted that John D. Rockefeller, Jr., is "not a bad fellow, but has good intentions", adding that he was surrounded by a crowd of leeches and did not know the real facts in Colorado.

Conditions at McKeesport

"Mother" Jones had a great deal to say about suppressing the right of free speech. This brings me to what seemed to me, when I came here, the most serious charge made against the United

"Allows Nothing to Swerve Him"

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

Some Syndicalist Ethics.—The Syndicalist is characterized by the harmony that exists between his theories and his tactics. He realizes that the capitalist class is his mortal enemy, that it must be overthrown, the wages system abolished and the new society he has outlined established, if he is to live; and he is proceeding to the accomplishment of these tasks with unparalleled directness. He allows nothing to swerve him from his course and lead him in an indirection.

States Steel Corporation; namely, that it has suppressed freedom of speech and caused speakers to be thrown into jail or fined, without justification. McKeesport, where the great works of the National Tube Co. and other iron and steel industries are located, has been the storm center of the agitation in regard to the suppression of free speech. So I went out to McKeesport to ascertain the facts and came away convinced that instead of being the proper subject of adverse criticism the policy of Mayor George H. Lysle is worthy of the highest commendation. I found that he is a man somewhat over 50 years of age, has lived nearly all of his life in McKeesport, where he was in business for many years, and has a lovely family. For more than 20 years he was a member of the City Council and is now serving his second term as mayor, which expires in 1922. He seemed at one time to be on the way to high public office, but his position

in regard to speech-making at McKeesport caused his name to be dropped by the politicians who make political slates in this county. That did not seem to bother Mayor Lysle, who continued to adhere to his policy of regulating public speaking. Some weeks ago, the mayor went on a vacation and during his absence public speaking by labor agitators was permitted by the acting mayor. When Mayor Lysle returned, he found a very serious situation. He became convinced that if the agitation continued it was very probable that there would be riots and bloodshed. He accordingly decided to exercise the authority vested in him by law and permit no public speaking. He would not even permit a political speech to be made, although an extremely interesting campaign for local offices is now on and the politicians were very anxious to make speeches in McKeesport. When a committee representing William Z. Foster made application for a permit for him to speak, the mayor refused to grant it. Foster then went ahead and spoke on the street, until he was arrested. Following his arrest and release on bail, a mob of his sympathizers marched to one of the plants of the National Tube Co., attempted to gain admission and at two gates at the entrance to the plant there were serious disturbances. At one point a considerable number of workmen within the plant, who were opposed to the union, bitterly resented the action of the mob, and, armed with steel tubes and other weapons, started to march forward to fight for their rights

Mild Form of Sabotage

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

Another kind of sabotage widely practiced by Syndicalists is the tactics of either ruining or turning out inferior products. Thus, by causing their employers financial losses, they force them to grant their demands. The numerous varieties of this kind of sabotage are known by various terms, such as "passive resistance," "obstructionism," "pearled strike," "strike of the crossed arms," etc.

and were with great difficulty restrained by plant officials.

Patriotic, But Sometimes Disorderly

These scenes of disorder seem to vindicate the mayor's position as showing that in spite of the fact that McKeesport is a town in which a very large percentage of its population is orderly and patriotic—a town which sent more than three thousand of its boys into the armies of its country, a town which subscribed over \$600,000 for a war chest, with 20,000 subscribers, a town which went "Over the Top" many times in subscribing to Liberty loans—in spite of all this a town in which there is a dangerous element which is likely to break out and cause serious trouble on slight provocation. As further evidence that the mayor is right, the action of the board of directors of the Chamber of Commerce last Saturday and similar action of the Rotary Club of McKeesport in indorsing his position, may be cited. Certainly the opinion of these business men is worthy of consideration.

While in McKeesport, I was told stories of threats made against the mayor and his family

"Capitalists are Thieves"

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

The Syndicalist knows that capitalism is organized robbery and he consistently considers and treats capitalists as thieves plying their trade. He knows they have no more "right" to the wealth they have amassed than a burglar has to his loot, and the idea of expropriating them without remuneration seems as natural to him as for the footpad's victim to take back his stolen property without paying the footpad for it. From long experience he has learned that the so-called legal and inalienable "rights" of man are but pretenses with which to deceive workingmen; that in reality "rights" are only enjoyed by those capable of enforcing them. He knows that in modern society, as in all ages, might is right, and that the capitalists hold the industries they have stolen and daily perpetrate the robbery of the wages system simply because they have the economic power to do so. He has fathomed the current system of ethics and morals, and knows them to be just so many auxiliaries to the capitalist class. Consequently, he has cast them aside and has placed his relations with the capitalists upon a basis of naked power.

that were terrible—almost beyond belief, but I was also told that the mayor had no idea of changing his policy.

As Seen by a Clairton Business Man

In seeking information about a great industrial struggle, it is always worth while to go into the humble walks of life and talk with people who are not parties to the struggle, but have means of knowing a great deal about it. In investigating conditions in Pittsburgh and nearby towns I had an extended conversation with a merchant of Clairton, an industrial city about 20 miles from Pittsburgh, in which steel workers and employees at the coke plants are very numerous. This business man is an Austrian by birth, having come to this country as a stowaway, when a boy of 15, about 16 years ago. He has traveled extensively, lived in

First Stage of Revolution

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

The General Strike Theory.—By the term "general strike," used in a revolutionary sense, is meant the period of more or less general cessation of labor by the workers, during which period the workers, by disorganizing the mechanism of capitalist society, will expose its weakness and their own strength; whereupon, perceiving themselves possessed of the power to do so, they will seize control of the social means of production and proceed to operate them in their own interest, instead of in the interest of a handful of parasites, as heretofore. The general strike is the first stage of the revolution proper.

Sabotage an Effective Weapon

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

Sabotage.—Next to the partial strike, the most effective weapon used by Syndicalists in their daily warfare on capitalism is sabotage. Sabotage is a very general term. It is used to describe all those tactics, save the boycott and the strike proper, which are inflicting losses on them through the stopping or slowing down of industry, turning out of poor product, etc. These tactics and, consequently, the forms of sabotage are very numerous. Many of them are closely related in character. Often two or more kinds of sabotage are used simultaneously or in conjunction with the strike.

Perhaps the most widely practised form of sabotage is the restriction by the workers of their output. Disgruntled workers all over the world instinctively and continually practice this form of sabotage, which is often referred to as "soldiering." The English labor unions, by the establishment of maximum outputs for their members, are widely and successfully practising it. It is a fruitful source of their strength.

several different States in the union, and in Mexico, is a keen observer and has a good English vocabulary. I asked him whether he thought many of the workmen at Clairton had become members of the union. He said it was his belief that nearly all of them are union men. In answer to a question as to why they joined the union—"Oh," he said, "they think they are going to get eight hours and more money. The union has speakers in all the principal languages. The other fellows—I mean the steel companies—could explain these things to the men if they would. I have in my hand an

To Exterminate "Scabs"

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

The Scab.—A large portion of the Syndicalists' success in their strikes is due to their energetic treatment of the strike-breaker. According to Syndicalist ethics, a poverty-stricken workingman, in his predicament, can do anything save scab. He may beg, borrow, steal, starve or commit suicide, and still retain the friendship and esteem of his fellow workers; but, let him take the place of a striker and he immediately outlaws himself. He becomes so much vermin, to be ruthlessly exterminated. The French Syndicalists are especially merciless toward scabs. They are making strikebreaking such a dangerous profession that scabs are becoming pleasingly scarce and expensive. They literally hunt scabs as they would wild animals. This war on scabs is popularly known as "La chasse aux renards" (the fox chase).

article published in the London *Times* of July 22 last, in which this paragraph appears:

OPEN AND FRANK DISCUSSION.

It has come to be seen rather more plainly in the last year or two that publicity, the open and frank discussion of difficulties between employers and employees, has gone far to settling labor troubles. This is all to the good, and the more the plan is adopted of freely ventilating any question under dispute, threshing it out and putting the points on both sides before the public, the more will strikes and serious troubles be averted.

"Now," said this business man, "Judge Gary doesn't do that—he doesn't talk with his men; he won't see them."

I tried to explain that Judge Gary is always glad to talk with employees of the Steel Corporation; that he has done so in the past and would welcome men in the future, if they came from the plants, but that he did not propose to talk to outsiders or allow them to dictate how he should run his business, but I doubt whether my explanation was convincing, for the reason that there has been

Not Concerned About Methods

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

Weapon of Minority.—Sabotage is peculiarly a weapon of the rebel minority. Its successful application, unlike the strike, does not require the co-operation of all the workers interested. A few rebels can, undetected, sabot and demoralize an industry and force the weak or timid majority to share in its benefits. The Syndicalists are not concerned that the methods of sabotage may be "underhanded" or "unmanly." They are very successful and that is all they ask of them. They scoff at the sentimental objection that sabotage destroys the worker's pride in his work. They prefer to be able to more successfully fight their oppressors, rather than to cater to any false sense of pride.

so much talk about the arbitrary attitude of Judge Gary that it is going to be difficult to remove the erroneous impression which has been lodged in the minds of even reasonable men.

Effects of Prohibition

I asked this business man what had been the effect of prohibition in Clairton and he replied:

"Prohibition is the best thing that ever came to Clairton. I used to take a drink occasionally myself. Perhaps I would now, if I had a chance, but I tell you the working people are better without booze. At my own place of business, I find money coming in as it never did before. Men who habitually asked credit when the saloons were open never think of doing so now, but put down the cash every time. In fact, I don't have to keep books any more because my business is on a cash basis; the men and women are better dressed and happier than they ever were. It would be too bad to have a strike come now and stop all this prosperity and happiness."

Finally this young man, who came from Aus-

tria, without a penny, who has been able to take care of a nice little family and save some money too, told me what he thought was the heart of the whole trouble and I wish his words could be brought home to every man, woman and child in the United States. He said:

"I will tell you what is the matter. The blessings of America are not appreciated. If every one had gone through what I have experienced in Austria; if every one could suffer as I suffered and could see his mother work and sweat and almost kill herself to keep clothes on her children, America would be better appreciated. I came from Austria 16 years ago; it took me 16 days to get over. I have never returned and I have never had the slightest desire to do so. I owe nothing to Austria—I got nothing from it but starvation. I am proud to be an American citizen. I don't want ever to see Austria again. My father and mother came over here after I did. My father in a few years lost his right arm in a mill—but the company took good care of him, giving him such work as he could do. He and mother are living down at Trenton, New Jersey, and own the house in which they live and another one. They were the only people in Austria to whom I owed anything and after they came I ceased to care for the people or the country. America is my country."

Let's take off our hats to this patriot of Clair-

Will be No State

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

Anti-Stateism.—At this early date, though many of the minor details of the organization plan of the new society can only be guessed at, many of its larger outlines are fairly clear. One of these is that there will be no State. The Syndicalist sees in the State only an instrument of oppression and a bungling administrator of industry, and proposes to exclude it from the future society. He sees no need for any general supervising governmental body, and intends that the workers in each industry shall manage the affairs of their particular industry: the miners shall manage the mines; the railroaders manage the railroads, and so on through all the lines of human activity.

ton, Pa., and earnestly hope that if times of strikes and trouble are to come, there will be thousands like him whose love of America will have steady influence and help to bring us into the light of a better day.

Railroad Employees Were Expected to Help

At a conference of union leaders Sept. 12 in Youngstown, detailed plans for the proposed strike of iron and steel workers, set for Sept. 22, were outlined by representatives from the Pittsburgh, Buffalo and Youngstown districts. J. E. McCadden, district organizer at Youngstown for the American Federation of Labor, declared when the strike takes place the organized steel workers expect assistance from the union railroad employees. He asserted railroad men will refuse to move any cars loaded with steel on that date and thereafter until the strike is settled, or any cars carrying raw materials to any steel plants. He declared this information came from A. F. of L. headquarters in Washington and that the railroad unions had already gone on record pledging their support in this manner.

"We are expecting no violence in connection with this strike," said McCadden. "One big factor which

Revolting Doctrine as to Children

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

Neo-Malthusianism.—The Syndicalist is a "race suicider." He knows that children are a detriment to him in his daily struggles, and that by rearing them he is at once tying a millstone about his neck and furnishing a new supply of slaves to capitalism. He, therefore, refuses to commit this double error and carries on an extensive campaign to limit births among workers. He has been a powerful factor in reducing births in France, which, according to recent statistics, are annually 35,000 less than the deaths. He is turned from his course neither by the inspired warnings of physicians nor the paid appeals of patriots. He has no race pride and but little fear. He sees in "race suicide" an effective method of fighting his masters; therefore, he uses it.

Another interesting and effective Syndicalist method of solving the child problem is to send strikers' children to surrounding districts, where they are taken care of by other workers until the strike is over. These tactics have been used with telling effect time and again.

will militate against violence is the absence of liquor in this struggle. No sensible workingman will resort to violence unless he is crazed with liquor. If the police authorities see that the liquor laws are enforced, it will go a long way toward eliminating danger. We want to play fair and fight fair and certainly desire no violence."

McCadden admitted that 90 per cent. of the union recruits in the recent campaign were foreign born, but he claims the great majority of men in the mills are of foreign extraction, especially those designated as common laborers.

Brands of firebrick and other refractories are listed in a little booklet compiled by the Refractories Manufacturers' Association. A copy can undoubtedly be had by addressing a manufacturer of firebrick.

Wages System and Stealing

FROM "SYNDICALISM," BY EARL C. FORD AND WILLIAM Z. FOSTER.

The Wages System.—The means whereby society gains its livelihood: the shops, mills, mines, railroads, etc., are owned by the comparatively few individuals. The rest of society, in order to work in the industries and procure a living, must secure the permission of these individuals. As the number of applicants for jobs is far greater than the needs of the industries, there is such competition for the available positions that those who secure them are, in return for the privilege to earn a living, forced to give up to the owners of the industries the lion's share (in the United States four-fifths) of the abundant products the highly developed machinery enables them to produce. The owners of the industries take advantage of their strategic position and steal the greater portion of the workers' product, giving them, in the shape of wages, barely enough to live on.

BASING POINT CASE TAKES FORM

Federal Trade Commissioner Thompson in Charge—No Date Set for Hearing

WASHINGTON, Sept. 16.—Commissioner Huston Thompson of the Federal Trade Commission has been assigned to have charge of the basing point controversy. No date has yet been set for a hearing by the Commission. The members are now familiarizing themselves with the voluminous briefs that have been filed for and against the maintenance of the Pittsburgh basing point.

The question of jurisdiction is still being left open by the Commission, but the members insist that there is no doubt about their right to make the preliminary investigation which it now has under way. They point to sections 5, 6, 9 and 10 of the Federal Trade Commission act. Section 5 declares that unfair methods of competition in commerce are unlawful and prescribes the powers of the Commission in investigating violations and the duty of the Commission to prevent them, pointing out that the Circuit Court of Appeals of the United States has exclusive jurisdiction in enforcing, setting aside or modifying orders of the Commission. Section 6 gives the Commission power to gather and compile information and to investigate business organizations from time to time. Section 9 specifies the right of authorized agents to examine documentary evidence, while the Commission has power to require by subpoena the attendance of witnesses and the production of documentary evidence. Section 10 imposes penalties for failure to obey the Commission's orders. Section 2 of the Clayton act, also construed to apply, states that it is unlawful for any person, either directly or indirectly, to practise unfair price discrimination.

Many Answers and Statements Filed

The Superior Commercial Club of Superior, Wis., has filed a supplement to its application. This is further supported by applications which have been filed by the State of Minnesota, the Joint Committee of Civic Organizations, Southern Association of Steel Fabrication and Birmingham Civic Association.

Answers have now been filed by the United States Steel Corporation and subsidiaries; Steel & Tube Co. of America, Chicago; Inland Steel Co., Chicago, and Interstate Iron & Steel Co., Chicago. In addition, the following firms and corporations have filed statements with the Federal Trade Commission in favor of the proposal to prohibit the use of Pittsburgh as a basing point: Southern Bridge Co., Birmingham, Ala.; McAvoy Sheet & Tin Plate Co., Chicago; Bailey-Burruss Mfg. Co., Atlanta, Ga.; Cary Safe Co., Buffalo, N. Y.; White Hickory Wagon Mfg. Co., Atlanta, Ga.; Montgomery Coal Washing & Mfg. Co., Inc., Birmingham, Ala.; Fuller & Sons Mfg. Co., Kalamazoo, Mich.; Gibbes Machinery Co., Columbia, S. C.; Navy Department, Washington; Carbo Steel Products Co., Chicago; Great Western Mfg. Co., Laporte, Ind.; United States Railroad Administration, Washington; E. C. Adams, Kansas City, Mo.; J. H. Williams & Co., Brooklyn, N. Y.; Johnson Iron Works, New Orleans, La.; J. S. Schofield's Sons Co., Macon, Ga.; Carolina Wholesale Hardware Co., Columbia, S. C.; Southern Iron & Equipment Co., Atlanta, Ga.; Chattanooga Roofing & Foundry Co., Chattanooga, Tenn.; Gemco Mfg. Co., Milwaukee; Brunswick Marine Construction Corp., Brunswick, Ga.; Tomlin-Harris Machine Co., Cordele, Ga.; Salem Iron Works, Winston-Salem, N. C.; Lombard Iron Works & Supply Co., Augusta, Ga.; Riddell Bros., Inc., Atlanta, Ga.; Oscar Daniels Co., Tampa, Fla.; Athens Foundry & Machine Works, Athens, Ga.; Volk & Murdoch Co., Charleston, S. C.; Birmingham Steel Corporation, Birmingham, Ala.; Perfection Mattress & Spring Co., Birmingham, Ala.

The following have filed statements favoring the retention of the Pittsburgh basing point: N. & G. Taylor Co., Philadelphia; Gulf States Steel Co., Birmingham; Lackawanna Steel Co., Buffalo; Jones & Laughlin Steel Co., Pittsburgh; Union Drawn Steel Co., Chicago; Kokomo Steel & Wire Co., Kokomo, Ind.; National Bolt & Nut Co., Pittsburgh; Donner Steel

Co., Inc., Philadelphia; W. A. Collings Co., Kansas City, Mo.; Weirton Steel Co., Wheeling; Wheeling Steel & Iron Co., Wheeling; Central Tube Co., Pittsburgh; Indiana Bridge Co., Muncie, Ind.; Republic Iron & Steel Co., New York; Morris & Bailey Steel Co., Pittsburgh; Youngstown Sheet & Tube Co., Youngstown; Pittsburgh Chamber of Commerce; Stark Rolling Mills Co., Canton, Ohio; Mansfield Sheet & Tin Plate Co., Mansfield, Ohio; Atlantic Steel Co., Atlanta, Ga.; West Virginia Rail Co., Huntington, W. Va.; Crawfordsville Wire & Nail Co., Crawfordsville, Ind.; Reading Iron Co., Reading, Pa.; Bethlehem Steel Co., Bethlehem, Pa.; Trumbull Steel Co., Warren, Ohio; Bolt, Nut & Rivet Institute, Pittsburgh; Eastern Steel Co., Pottsville, Pa.; McKeesport Tin Plate Co., McKeesport, Pa.; American Steel Co., Pittsburgh; Superior Steel Corporation, Pittsburgh; Pittsburgh Steel Co., Pittsburgh; Knoxville Iron Co., Knoxville, Tenn.; Carnahan Tin Plate & Sheet Co., Canton, Ohio; Chattanooga (Tenn.) Chamber of Commerce Industrial Board; Page Steel & Wire Co., Pittsburgh, Pa.; Steubenville (Ohio) Chamber of Commerce.

O. F. S.

Steel Industry to Be "Investigated"

WASHINGTON, Sept. 16.—Although the Federal Trade Commission asked for \$500,000 to conduct an investigation into the "basic industries," the Appropriation Committee of the House of Representatives reduced this sum to \$150,000 in the deficiency bill recommended last week. Chairman Murdock of the Commission told the committee that in asking for the full sum as part of the fight against the high cost of living he considered an investigation of the steel industry as next in importance only to the investigation of fuel costs. He said: "Steel is a commodity which enters into everything, next to fuel. It affects all the foodstuffs. For example, a year ago when there was considerable Eastern criticism of the Western farmer because of the price he was getting for his meat, the farmer came back and said, 'Look what we are paying for our reapers and our steel and lumber.'"

Commissioner Colver outlined the Commission's plan for investigation of the steel industry. "We would go back to the iron ore, on one side and to the coking process, with the coal that lies back of it, on the other side." Commissioner Murdock told the committee that the Commission would spend \$20,000 on its investigation of the cost of production of farm implements and \$10,000 on the Pittsburgh basing point controversy.

New Youngstown Tube Mill

President James A. Campbell announces that the Youngstown Sheet & Tube Co., Youngstown, Ohio, will add at its main works a tube mill for production of 4 to 10-in. pipe, with a monthly capacity of 5000 tons. It will involve the investment of a million and a quarter dollars. It is expected to commence operations by April 1 next. Contracts for the building and equipment have been awarded. Sustained demand from the oil country for lapwelded pipe and indications of continued developments in that territory prompted the authorization. The Youngstown Sheet & Tube Co. now operates ten tube mills, five on lapweld in sizes from 2 to 20 in. and five on buttweld, from 1/8 to 3 in. Present pipe capacity is 500,000 tons annually. The company's rated skelp capacity is 534,000 tons yearly, and any additional semi-finished material needed for the new tube mill will come from the sheet mills or plate mill.

September Meeting New York Steel Treaters

The New York Chapter of the American Steel Treaters Society held its September meeting in the auditorium of the Bush Terminal Sales Building on Wednesday evening, Sept. 17. Two papers were presented: "The Forging of High-Speed Steel," by A. H. Kingsbury, Crucible Steel Co. of America, and "Factors To Be Considered in the Heating and Cooling of Steel," by C. D. Bamhart, W. S. Rockwell Co.

Attempted Intimidation Causes Riot

Strikers' Efforts to Prevent Return of Workmen to Hammond, Ind., Plant Precipitates Bloody Clash with Police

As mentioned in THE IRON AGE of Sept. 11, five striking workmen of the Standard Steel Car Co., Hammond, Ind., were killed and about 35 wounded during a clash with the police and armed guards of the plant. Just what happened during and immediately before the fight is a matter of dispute between the participants, but the events leading up to the incident are well established. During the past few weeks, employees in increasing number, principally native Americans, have shown an inclination to return to work. Several of them who did so were waylaid by strikers and assaulted. As a result, these men, of their own volition, decided to go to and from the plant in a body and did so for the first time on Sept. 8. On the following day, the strikers formed a parade including about 600 men, and marched to a point about three blocks from the plant where they were met by police and armed company guards who were awaiting the arrival of the body of returned workmen. The police requested the strikers to get off the street, so as to permit the other men to pass and when they met resistance, the fight started.

Statements of Strikers

The strikers maintain that they were not armed and that their purpose was not to molest the returned employees but to stage a peaceful demonstration as a protest against the imputation that aliens were trying to prevent Americans from working in the plant. They contend that the great majority of their number are American citizens or have taken out their first papers and they point to the fact that a number of returned soldiers in uniform were members of the parade, among them the leader, who carried an American flag. They further assert that none of the returned workmen had been molested and that the parade of the latter the day before was regarded as an affront to the Americanism of the strikers. This explanation seems rather weak in view of the fact that it was found necessary to secure an injunction against the intimidatory tactics of the strikers, which, the company asserts, was not enforced. As to the contention of the men that they were not armed, it should be noted that there were 600 in the affray and that most of them dispersed before they could be apprehended and searched. While no weapons were found on those killed or arrested the question of arms resolves itself into placing the word of the officers of the law against that of the strikers. The police contend that the first shot was fired by the other side and although they suffered no gunshot wounds, one of their number was seriously injured while fighting in close quarters.

History of Strike

The strike of which the clash is an outcome was called on July 18. The main purpose was to secure recognition of a newly formed union, affiliated with the Brotherhood of Railway Carmen of America, and incidentally to limit output by a further reduction in hours, to secure an increase in hourly guarantees to piece workers to bring about the abolition of piece work, and to destroy the plan of employees' representation which had been adopted

by the company and the men on March 3, 1919, as the result of a vote which showed over 83 per cent of the employees in favor of it.

Handled by Committee

Following the creation of the new union local of the Brotherhood of Railway Carmen, the older organizations planned the strike and are now handling it through a committee of three. It is the belief in some quarters that the strikers are mere pawns in the hands of the union leaders and that the walkout at the Standard plant was intended as an example of what could be done in the big steel industries of Gary and South Chicago if the demands of organized labor are not acceded to. Throughout the strike, labor has attempted to play on the emotions of the public by references to low pay and hard working conditions. As the result of this insidious propaganda, pressure was brought to bear on the company by neutral parties to take back the men at increased wages. Consequently the company felt it necessary to set forth its side of the controversy, which it did in a full page advertisement in a local newspaper. Herein it was stated that the lowest paid employees were earning \$4.62 a day and the higher have been paid up to \$10 a day. From Jan. 1, 1916, to July 18, 1919, when operations ceased, labor rates were increased 80 to 135 per cent. Since the signing of the armistice, no orders for new cars have been received because of the uncertainty of the railroads as to their future needs and their ability to finance them. On the other hand, the company has been obliged to accept cancellations for nearly 12,000 cars and was only able to prevent cancellation of a considerably larger number by making substantial reductions in the prices at which the orders had been taken. Every possible effort has been made to keep the various departments in operation and the company continued to build cars in order to afford employment to its men, notwithstanding the fact that cars built could not be shipped because the railroads were not in position to take them and they have had to be stored for months entailing considerable hardship and loss to the corporation.

The Company's Position

Although the company has consistently refused to meet any representatives of the strikers who were not employees at the plant, it has entertained the complaints of its former workmen. When the latter brought up the question of wages, the company agreed to increase the lowest wage from 42c. an hour to 45c., provided the offer were accepted immediately. The offer, however, was turned down. Another request of the men was that operation be arranged so that all employees would have employment, despite the fact that the company's business is slack. An offer to comply with this demand by shutting down two or three days each week was rejected. Although the plant is now operating on an 8-hr. basic day with provision for time and one-half for overtime work, the men indicated that they wanted a further reduction in hours, at the same time admitting that, if this were done, higher hourly rates of pay would be

necessary. A further increase in the company's operating costs, under present conditions, was, of course, out of the question.

The Company's Rights

The company feels that it has been badly treated by its men and intends to adhere firmly to what it regards as its manifest rights. It has publicly announced that it will re-employ the men at the same rates of pay and under the same general working conditions as prevailed on July 18. It will entertain all grievances of individuals which may be brought to the management for adjustment or through the employees' representatives regularly selected some months ago, if desired. It will not, however, deal with special committees selected at this time by any one class of men, and it reserves the right to employ only such men as in its judgment are efficient and willing to work under the company's rules. About 350 men are now working in the plant.

TO PREVENT STRIKES

Our Country First Conference Advocates Restraining Employers and Employees

Our Country First Conference, held at the Congress Hotel, Chicago, on Sept. 8 and 9, some of the proceedings of which were covered in THE IRON AGE of Sept. 11, concluded its deliberations by passing resolutions setting forth its views on the economic problems of the day. The resolutions throughout express the opposition of the meeting to all socialistic and bolshevistic theories. They recommend increased production and a return to the letter and spirit of the constitution as remedies for our present problems. They demand the maintenance and protection of private property and the early reduction of the Government's activities affecting business to the smallest scope. They urge that employees and employers individually and by their duly instituted organizations pledge themselves to exert every reasonable effort for the elimination of disturbances tending to interrupt production, and for the speedy return of all industry to a normal basis. They declare that every attempt to fix prices has been a failure and that experience shows this is a dangerous field for the Government to enter. They assert that adequate and efficient production is the basis of social well being and progress for the individual and the community and that it is the duty of the wage payer, the wage earner, and the general public to exert every reasonable effort for improving and increasing the quantity and quality of production. They condemn Government ownership generally.

Touching on the question of strikes, the resolutions set forth that while the individual worker and his employer should be free to cease the individual employment relation provided no contractual obligation is violated, nevertheless employee and employer in Government and public utility services where the public service is paramount, should be restrained by law from instituting by concerted action a strike or lockout, and instead effective machinery should be established in such services for prompt and fair hearing of any requests, difference or disputes touching upon the employment relation, and for adequate redress of any grievances proved to be justified.

The conference condemned that part of the league of nations covenant proposing the establishment of an international bureau of labor and enunciating the purposes thereof.

The resolutions also urge a reduction of Federal taxation as rapidly as possible and the adoption of the budget system by the national Government as a means of controlling and reducing its expenditures. They further demand the stabilization of foreign exchange and the suppression of radical teachings in the schools.

The resolutions will be presented to Congress and steps will be taken to form some kind of organization to give effect to them.

Charles Piez, president of the Link-Belt Co., Chicago, and formerly vice-president of the Emergency Fleet Corporation, was chairman of the resolutions committee, and Alba B. Johnson, president of the Railway Business Association, and until recently president of the Baldwin Locomotive Works, was vice-chairman. Mr. Piez told the conference that profit-sharing, shop committee management, soviets and similar panaceas were doomed to failure.

"I am," he said, "in favor of opening up the opportunity for acquiring a stock interest in an industry to every workman whose length and character of service justify it, and who has the nerve to assume the responsibility to pay for that interest in cash. And when the stock acquired by workmen and employees reached a proper volume, I would gladly welcome a representative of their choosing, as a member of the board of directors."

Conditions at Detroit Improve

DETROIT, Sept. 16.—The labor situation in Detroit and throughout Michigan appears to be improving materially. On every hand the signs of unrest are growing less evident from day to day and factory reports show, it is said, that the workers are taking heed of the oft-repeated warning that production must be greatly increased if the present high prices are to be reduced. The fact that winter is rapidly approaching is also said to be a factor in the situation. The supply continues to be short in all lines of skilled labor, while the supply of common labor more nearly meets requirements.

Grand Rapids, Mich., is reported to have been very fortunate in the matter of labor disputes this season, owing to the good understanding between employers and employees. In all except the building trades there has been almost complete harmony, due largely to the far-sighted policy of the manufacturers, who adopted the 48-hr. week early in the year.

The records of the 12 Michigan free employment bureaus show continued industrial activity, especially in central Michigan. In this section of the State, as in others, there is a large demand for labor, while many industries are steadily increasing their forces. The State labor commissioner has added new bureaus at Traverse City and Marquette, Mich., because of the growing demand in those cities for labor.

At Saginaw, Mich., the strike of electrical workers, which tied up six firms, has been settled. Under the agreement an open shop arrangement will exist, with 75c. per hr. minimum wage. The old scale was 55c. Wages will be ruled by the worker's ability and efficiency rather than by any ironclad rule. The maximum wage under the new agreement will be \$1 per hr.

At Bay City, Mich., a referendum among its striking employees conducted by the Industrial Works, manufacturer of cranes, showed the employees overwhelmingly in favor of returning to work. An advertisement published a day or so ago in one of the local newspapers, stated that the company would re-open its shop as soon as the men took formal action declaring their strike off.

No Change in Wages

There will be no change in the rates for sheet and tin mill workers in September and October as a result of the bi-monthly examination of selected sales sheets of mid-western mills held in Youngstown, Ohio, Sept. 11, between representatives of the Western Bar Iron Association and the Amalgamated Association of Iron, Steel and Tin Workers. Average price of Nos. 26, 27 and 28 black sheets shipped by the mills in July and August was \$4.35 per 100 lb., the same as at the July settlement. The July examination effected a reduction of 4½ per cent. in the wages for sheet-mill workers as compared with the rate for May and June. The average price on shipments of tinplate during the past two months was \$6.90 per base box, the same as

at the July examination, when tin-mill operatives sustained a reduction of 5 per cent. from the May-June rate.

Agreement With Employees Probable

ST LOUIS, Sept. 17.—One thousand employees of the National Enameling & Stamping Co. were thrown out of employment when the plant at Granite City, Ill., was closed down on Sept. 10, pending readjustment of the wage scale for the coming year. It was announced by officials of the company and by union leaders that the situation was by no means a strike or lockout, but merely a temporary suspension, during which officials and employees will evolve a new scale of wages and working conditions.

A conference was held on Sept. 11 between T. K. Niedringhaus, vice-president; A. G. Bittner, general manager, and Fred Kottmigier, representing the company, and J. T. Dorry and James Newman representing the men, at which it was said a new agreement virtually was reached. There was said to be a difference of a few cents between the representatives, and at the conclusion of the conference it was announced that an agreement probably would be perfected and the men signed up by the end of the coming week. The company announced, however, that even though the agreement was signed soon, the plant would not open before Sept. 22.

Men Laid Off

Following an organization meeting of the Madison, Ill., branch of the Brotherhood of Railway Carmen, composed of 924 employees of the American Car & Foundry Co. of Madison, a telegram was sent on Sept. 10 to the Federal Labor Bureau at Washington, asking an investigation of the laying off of 600 men by the car company. The men claim that the lay-off was ordered with the purpose of intimidating the men, who had recently joined the union and of forcing the disbanding of the union.

The order posted by the company stated that owing to the fact that the company has no orders in sight, after the completion of the present contract, and with a view to giving the oldest and most efficient employees in the plant steady work, it was necessary to cut work to 15 cars a day, and that the men would be laid off accordingly.

Probable Effect in Milwaukee

MILWAUKEE, Sept. 16.—It is estimated that if the nation-wide strike of organized steel workers is called on Sept. 22, as proposed, about 85 per cent of the 5000 employees of this class in Milwaukee industries will be thrown out of work. This represents the percentage of steel workers who belong to unions. According to W. J. Fairbairn, secretary and manager Milwaukee Metal Trades and Founders' Association, there are approximately 30,000 men in the foundries and machine shops of the Milwaukee district, but they will be affected only by a shortage of material growing out of the steel workers' strike.

In the World of Labor

Forty-four retired employees of the Carnegie Steel Co., Youngstown, Ohio, district, attended the annual reunion Sept. 9 at the Ohio works. The men ranged from 64 to 90 years of age and had worked in the mills from 20 to 40 years.

Ending a strike of 11 weeks, 750 employees returned to work Sept. 15 at the Sharon, Pa., plant of the Savage Arms Corporation. A piece-work system, to which the employees originally objected, has been inaugurated, but the workmen will be given a 5 per cent increase in wages. The company has enough orders on its books to insure steady operations for over six months.

After a two days' strike, sheet-metal workers in Youngstown, Ohio, returned to work when employers granted their demand for a wage increase from 80 to 90 cents per hour.

International Trade Conference

WASHINGTON, Sept. 16.—According to A. C. Bedford, chairman of the executive committee of the International Trade Conference, arranged on the initiative of the Chamber of Commerce of the United States, and to be held at Atlantic City on Sept. 30, stress will be laid upon problems peculiar to the readjustment period in foreign trade. These include the economic needs of the various countries concerned during the next two years; emergency measures necessary during the readjustment period for the promotion of trade and the movement of raw materials; the possibilities of pooling and allocating products, equipment and transportation; possible measures for the association of business enterprises here and in Europe to strengthen backward countries; reciprocal measures affecting investments of capital to secure equal advantages and avoid duplication of effort; methods for stabilizing foreign exchange; the elimination of unfair practices and a basis for the reinstatement of commercial treaties.

Homer L. Ferguson, president Newport News Shipbuilding & Dry Dock Co., is president of the Chamber of Commerce of the United States. The executive committee having the arrangements in charge includes: A. C. Bedford, chairman, James A. Farrell, Ivy L. Lee, George Ed. Smith and Ernest T. Trigg.

The French delegation will be headed by Eugene Schneider of the Creusot works.

New England Foundrymen September Meeting

About 75 foundrymen and supply men attended the meeting of the New England Foundrymen's Association at the Exchange Club, Boston, Sept. 10. The main features consisted of a dinner and an address on his recent trip to Europe by A. O. Backert, president American Foundrymen's Association. A committee was appointed, consisting of three past presidents of the association, to draw up proper resolutions of sympathy for the family of Stephen E. French, a former president of the association, who was recently killed when struck by a motor truck in Boston. Mr. Backert spoke of conditions in Belgium and France, of the devastation wrought to the Belgian steel plants, of European characteristics of founding and steel making, of the automotive industries abroad, and of the battlefields he visited.

Electrical Engineers' Meeting

The thirteenth annual convention of the Association of Iron and Steel Electrical Engineers will be held at the Hotel Statler in St. Louis, Sept. 22 to 26. It is expected that approximately 2000 delegates from various parts of the country will attend. Many subjects of interest will be discussed by authorities and papers on various phases of electrical operation of steel plants will be read. The annual banquet will be given on the evening of Sept. 24. Clarence H. Howard, president of the Commonwealth Steel Co., will be toastmaster. D. M. Petty of the Bethlehem Steel Co., president of the association, will be one of the speakers at the banquet. He has been superintendent of the electrical department of the Bethlehem plant for the last eight years and is recognized as an authority on the electrification of steel mills.

Business Paper Publishers to Meet

The annual convention of the Associated Business Papers, Inc., whose headquarters are at 220 West Forty-second Street, New York, will be held at the Congress Hotel, Chicago, Sept. 18, 19 and 20. A banquet open to all concerned with advertising and publishing will be held the evening of Sept. 19. The sessions of the convention will be devoted to such subjects as relations with business, editorial work, advertising and circulation. With the exception of the sessions of the afternoon of Sept. 19 and the morning of Sept. 20, meetings will be open to all interested publishers, advertisers and others.

An exhibition of imports will take place at Frankfort, Germany, Oct. 1 to 15. Switzerland, Holland and Scandinavian countries plan officially to participate.

ESTABLISHED 1855

THE IRON AGE

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The Real Question at Pittsburgh

The question being considered by labor union officials at Pittsburgh as this issue of THE IRON AGE goes to press is not merely, Will there be a nation-wide strike of iron and steel workers? The real question is whether men who believe in anarchy, revolution, Syndicalism and bloodshed, ambitious agitators who will not hesitate to do anything, no matter how brutal it is, to accomplish their ends, shall have their way or the more conservative element under the leadership of Samuel Gompers shall prevail and prevent the strike at least until the coming conference to be held in Washington.

A few days ago, one of the editors of THE IRON AGE, after an investigation as to conditions prevailing in Pittsburgh, McKeesport and neighboring industrial cities, discovered evidence connecting at least the leading spirit of the strike agitation with extreme Syndicalism and other forms of revolutionary propaganda. This evidence, including the pamphlet "Syndicalism," from which liberal extracts are published in this issue, was presented to Mr. Gompers and an opportunity given him to use his influence to prevent the strike and save the American Federation of Labor from disgrace. Office attaches accepted the evidence and stated that those who had confidence in Mr. Gompers as a conservative leader would not be disappointed as to his attitude in regard to the proposed steel strike. It is earnestly to be hoped that this will prove to be true and that conservatism will prevail until employers and employees meet face to face at Washington and if possible adopt some method to prevent industrial struggles.

We Must Import Goods

It is not without substantial basis that we have called ourselves "a nation of economic illiterates," but the condition cannot continue without serious consequences. In the past it may have been a case of ignorance being bliss, but even that is questionable. We are now confronted with problems that must be solved rightly or we shall pay the penalty of our ignorance.

The rest of the world used to run itself with relatively little assistance from the United States, and got along fairly well, preserving its finances and manufactures. Relations to-day are different. We have become the most powerful nation and what we do along various lines will profoundly affect the rest of the world. It is within our power, if we pursue a sufficiently ignorant course, to destroy for many years the gold standard in other countries, keep them on a paper basis, prevent commercial intercourse with them, deprive ourselves of the labor we need and the products of labor that we need, and pursue the vicious circle of alternate advances in wages and commodity prices, deny ourselves the opportunity to make money in foreign countries and renounce the basis of real prosperity at home.

Week by week exchange on European countries declines, which means that in those countries exchange on the United States advances. Exchange is usually restored to par by the movement of gold, but that is now impossible because other countries do not have anything like sufficient gold. The restoration can be made only by the movement of credit, chiefly securities, or goods. If the foundations are not laid for progress toward restoration, then conditions will continue to grow worse. The foreign countries will be unable to get on a real gold basis; they will have no credit with us. They will be unable to buy our goods and American investors will have no incentive to buy foreign securities or make investments abroad. At the present time there is the incentive, because the purchase of a foreign bond, for instance, with the present rate of exchange, insures a large profit to the investor if exchange reverts to gold parity. If, however, we refuse the aid necessary to restore exchange, the investment becomes altogether unattractive. The prospect will be that of our being unable to transact business with the rest of the world.

Such isolation might be durable, though the store we have in the past set upon an export trade and the comfort we have enjoyed from the

use or consumption of imported goods would suggest that the isolation would prove uncomfortable, but as we trod the path to such a condition, the way would be very rocky. Instead of deflation, we should have a continuance of inflation, which everyone is now agreed is most undesirable.

In the past, when the world was running its affairs without much help from the United States, economic laws prevented our having any undue inflation. The tendency in that direction, with the world as a balance wheel, resulted in our exporting less and importing more. Gold then flowed out of the country, commodities became more plentiful and the tendency toward inflation was checked. If we are isolated through foreign countries not being on a really gold foundation, the corrective will not be applied.

It is being said on all hands that "we" should extend credits to foreign countries. It looks as though that would correct the present exchange situation, but, if credits were extended, it would not be "we," but bankers and capitalists who would extend the credits. If the credit and exchange situation of the world were to be restored, the lenders would reap large profits from the transaction, but the possible lenders can now see no such assurance. There must be the promise that trade in merchandise will in time support the situation. If the credits deemed desirable were extended, thereafter it would be necessary for the rest of the world to sell us goods to pay interest on their securities which we hold, and to pay for the goods they should buy from us. With what other medium could they pay?

If the condition is not righted, if matters be allowed to drift until there is a wall between the United States and the rest of the world, there will be inconvenience and suffering on both sides of the wall. There is not much question which side of the wall would witness the most suffering. The other countries have a wide variety of climate and of mineral resources. Put on a paper basis, they might find means of trading with each other, while we should have only ourselves to trade with. The American merchant marine, which some boast of and others criticise, could not even serve the rest of the world, because it would have only paper with which to pay freights.

The investors, capitalists, bankers, who are expected to extend credits at this time to foreign countries should be shown that the people of the United States are willing to import goods as well as export, or they will not be encouraged to lend money to tide over the emergency, as the threat will be that the present condition is not only to be made permanent but is to be made worse. Any one who urges that we must export more and must discourage imports is rendering a disservice to his country.

There isn't a factory in America that is not actually a ladder by which the earnest employee can climb to responsible jobs—if he only sees the ladder and prepares himself to climb the rungs. So many great leaders have already mounted that ladder. American people know that to condemn

industry is to condemn their own chances to rise and improve themselves.

An Important Court Decision

The decision of Judge Orr in the District Court of the United States of Pittsburgh as reported elsewhere in this issue is of far-reaching importance. While in previous decisions, some of which are quoted by Judge Orr, the limitations of the power of Congress as to interference with private business have been clearly set forth, this decision is the first, we believe, in which these limitations have been applied to the Federal Trade Commission.

Here was a case of a company which had been patriotically doing its duty, furnishing a product needed by the Navy Department, charging a fair price and offering to accept less or even to donate a considerable tonnage to the navy. Instead of accepting the generous offers of the company, the Navy Department, for the pretended reason of wishing to determine a fair price, when in fact it was absolutely unnecessary to do so, called upon the Federal Trade Commission to help it out and carry on a prying investigation as to the cost of the product in question. Naturally, and the court says properly, the company refused to give this permission and the judge now holds that the manufacturing of an article is not interstate commerce and that the Federal Trade Commission has no power to seize books and other records to determine what costs are. One of the interesting remarks of the court is that "It never was intended that the extent of a freeman's duty to perform should be determined by those who demand performance." In other words, it is not intended that a manufacturer's duty should be determined by the Federal Trade Commission, which demands that he do certain things.

The special significance of the decision at this time is that it seems to be in harmony with the position taken by the United States Steel Corporation in its answer filed in the Pittsburgh basing controversy before the Federal Trade Commission, in which the corporation denies the jurisdiction of the Commission to fix the prices at which steel products shall be sold or to determine whether Pittsburgh, Chicago or any other point shall be a basing point upon which such prices shall be made.

Highly significant also was the remark of the court that the contention of counsel was probably sound in urging section 6 of the Federal Trade Commission act to be declared unconstitutional, not only as to investigations and compulsory disclosures in matters beyond the commerce power of Congress, but also in attempting to authorize a search or seizure by an administrative agency of the Government when there is no charge or suspicion of wrong-doing. Judge Orr did not, however, feel it was incumbent upon him to give advice to Congress.

While the war was in progress, manufacturers and other business men submitted to many exasperating demands of public officials, but this is not at all likely to continue under peace conditions

and such a decision as has just been rendered at Pittsburgh will do much to clarify the atmosphere and help greatly in showing manufacturers what their rights are.

British Foreign Steel Trade

British exports of iron and steel in peace times do not show the expansion that many expected. A study of the official monthly figures for the first half of 1919 reveals a very small growth. For the first seven months of this year the total exports, excluding iron ore but including scrap, have been 1,209,107 gross tons as compared with 972,828 tons for the same period in 1918—an increase of 24.2 per cent. The average monthly exports for the first seven months of 1919, 172,729 tons, contrast with a pre-war record of 420,757 tons per month in 1913. The May, June and July outgo averaged 198,495 tons per month.

The principal improvement in this year's exports as against those a year ago has been in galvanized sheets, steel bars, rails, wire and plates. Nearly 62,500 tons of galvanized sheets were exported in the first seven months of this year, against only 5237 tons in the same period a year ago. In steel rails the figures for the same periods are 65,600 tons and 18,000 tons; in steel bars, 148,000 tons and 101,900 tons; in wire, 12,000 tons and 3400 tons, and in heavy steel plates, 156,000 tons and 53,600 tons. But in all of 1913 galvanized sheet exports were 762,000 tons; steel rails, 500,000 tons; steel bars, 250,000 tons; wire, 60,000 tons, and heavy steel plates, 134,000 tons. Tin-plate exports have not expanded much, having been 150,000 tons for the first seven months of this year, against 127,300 tons a year ago. In 1913 they were 494,500 tons. The decline in pig-iron exports has been heavy. For the first seven months of this year these have been 177,800 tons against 304,000 tons for the same period last year, including alloys. In 1913 these exports were 1,124,181 tons, also including ferroalloys.

British iron and steel imports have been correspondingly small. For the first seven months of 1919 they have averaged only 38,829 tons per month and were heaviest in January and February, excepting July, when they were 47,912 tons. These meager imports compare with a monthly rate of 195,264 tons in 1913. A feature of the import situation is the decline in iron-ore receipts. For the first seven months of this year these have been 3,188,000 tons as compared with 3,875,000 tons in the same period in 1918. For the year 1913 these imports amounted to 7,442,000 tons, so that the present receipts are considerably less than half those in pre-war times. This situation has already been reflected in the British low phosphorus pig-iron supply.

British export as well as domestic trade continues to be handicapped by the unusual demands of labor. Production is below normal, the coal supply is inadequate and unrest is general. If the latest reports are true, however, the worst has been experienced in capital-labor relations in both Germany and England, and it behooves the American wage-earners to realize as those in the nations mentioned now seem to that increased production is

the watchword whatever new order of things is set up in industrial management.

British Empire Patent Plan

The proposed amendment of the British patent laws to establish empire patents is attracting attention in America as a means of simplifying the machinery for securing protection for inventions in foreign countries. The details of the plan as worked out by the Institution of Electrical Engineers have just reached this country, and reveal the idea as somewhat different from what had been anticipated. It was thought that the American system of a Federal patent, holding good in all States of the union, would be copied, but this was abandoned after investigation had revealed serious obstacles. As the list of dominions, colonies, dependencies and protectorates named in the Institution's report as having patent regulations of their own numbers nearly 50, and as their interests in many respects are very different, some other solution of the problem was sought, and the result is the subject of this report.

The purposes aimed at were to secure low cost in the case of an application throughout the empire; reciprocity; no changes involved in the existing laws of the empire, and to make adhesion to the plan optional in any territory. The report says: "Under this scheme any person may obtain an empire patent covering as many of the British dominions, colonies, dependencies and protectorates as he may select, by making application to the British Patent Office, the fees payable being the sum of existing local government fees in the selected territories, plus such small fee as may be charged by the British Patent Office to cover the expense of carrying out its part of the scheme. Therefore, the patent will be assimilated with the domestic patents of each of the selected territories for the determination of validity, infringement and all other questions affecting letters patent after grant."

The report suggests that the inventor be given reasonable time under the law (18 months is the period named) after the issuing to him of a local patent within which he may apply for the empire patent. It is further stated that it is not necessary that all territories of the empire should adopt the plan before making it operative. The explanation is made that provision would be included to the effect that the declaration of the validity or invalidity of a patent in one territory would not of necessity establish the case for the empire as a whole.

Under a patent system such as this the American inventor would be able to look over the British Empire and select such countries as he deemed worth while to him, and with a single application cover the field. There is nothing in the suggestion of the report which would lead to the belief that the proposed law would not extend to the citizens of all other countries having patent treaties with Great Britain. It is not known here whether the plan is to try to insert the provision into the patent bill now pending in Parliament, but discussion has been aroused along lines which apparently are deemed practical and may lead to parliamentary action later, if not now.

Cleveland Company Reorganized

The Foote-Burt Co., Cleveland, manufacturer of single and multiple spindle drilling machines, has been reorganized, and G. E. Randles, formerly vice-president, has become president. Other officers are T. H. Doan, Jr., vice-president; W. S. Quinlan, secretary, and S. E. Gross, treasurer. A. W. Foote, president and treasurer, and S. G. Burke, secretary, have retired. The interest of the Burt estate, represented by preferred stock, has been retired. The new board of directors includes the president, vice-president, secretary and J. R. Blakeslee and S. L. McCune. Mr. Randles, the new president, has been connected with the company since it became an Ohio corporation in 1906, and for the past 10 years has been its active head.

The announcement was made recently that this company was planning the erection of a large new modern plant. With the reorganization the plans for the new plant will be carried out. A site has been acquired at St. Clair Avenue and the Belt Line Railroad. The financing and reorganization of the company have been through the medium of the Foote-Burt Machine Co., recently incorporated for that purpose.

Additional Changes in Norton Co.

Several changes in personnel of the Norton Co., Worcester, Mass., are announced, following those made known at the time of the recent reorganization of the company. W. H. Montague is made assistant to Herbert Duckworth, sales manager of the grinding wheel department. J. H. Johnson is assistant to H. W. Dunbar, sales manager of the grinding machine department. F. A. Emery, who has been an assistant in the tile department, has been made assistant to Vice-President W. L. Neilson, foreign sales manager, and will sail for England at once to take up his new duties. Gregory Brown has been made assistant engineer in the grinding machine department to fill a vacancy made by the promotion of Mr. Dunbar. Clifford S. Anderson has been placed at the head of the legal department, and C. L. Jenks is in charge of the patent department. Marcus W. White is the new purchasing agent and L. R. Atwood is his assistant. Otto J. Lof, who was the company's representative in Germany for many years, has been assigned to a new district made up of Sweden, Norway and Denmark in each of which countries an agency has been opened.

Steel Corporation's Plans as to Extensions at Duluth

A newspaper report published at Duluth, Minn., is to the effect that the United States Steel Corporation will make large additions to the plant of the Minnesota Steel Co., Duluth. The company quotes a letter from Judge Gary to Charles P. Craig, chairman of the steel base committee of Duluth, in which Judge Gary said: "We have this very day been considering plans for the improvements at Duluth. We shall proceed as rapidly as circumstances will permit."

Judge Gary when asked Tuesday about the plans of the corporation as to Duluth, and particularly as to the recent publication, said that additions were being made, but he could not go into details. The Duluth newspaper says as to the basing point hearing:

Oscar Mitchell had an interview with Judge Gary last month. He brought back word that the chairman of the Steel Corporation expected Duluth's case to be presented at the general hearing.

Since then the State of Minnesota has intervened, and Duluth has put in appearance on its own account. Mr. Craig, as chairman of the steel base committee, wrote Judge Gary what had been done.

It is in reply to that letter that Judge Gary writes that the matter of the Duluth plants has not been neglected.

Boston Branch of Fairbanks Co. Moves

The Boston branch of the Fairbanks Co., machine tools and mechanical supplies, will move Jan. 1 from its present quarters at Pearl and Franklin streets, to 574-594 Congress Street, South Boston—a building with four floors, having a total area of 80,000 sq. ft. The building, which occupies the block on Congress Street from Stillings Street to the New Haven freight yards,

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will be somewhat remodeled to be adapted to the company's needs. The floors will be raised to the height of freight car floors to facilitate the unloading of heavy material and will have 24 ft. of head room for the stacking of bars vertically. Display windows will be built on the Congress and Stillings Street sides. The building will be the New England distributing point for Fairbanks products.

The company has been located at its present quarters for 30 years. Here are housed the general display room, the offices of Manager J. R. Beatty and his staff and stock rooms for various kinds of mechanical equipment and supplies.

Rochester Forge Co. Ready to Operate

The Rochester Forge Co., Inc., Rochester, N. Y., expects to begin production in its new plant during the coming week. It will specialize on ball race forgings, rings, disks, pinions, spindles and special shapes and a full line of smooth forged die blocks and trimmer die steel. The plant is equipped with one 3500-lb. double leg and one 1500-lb. single leg Chambersburg hammer, power for which is furnished by a Wickes 250-hp. waste heat type vertical boiler. The furnace equipment consists of two Tate-Jones heating furnaces and a heat-treating plant erected by the same company. The furnaces are coal fired with auxiliary equipment for oil on both furnaces and boiler. The officers of the company are W. H. Kline, president; E. O. Jenkins, superintendent, and E. E. Guntess, sales manager.

Iron and Steel Markets

GENERAL STRIKE UNLIKELY

No Serious Check to Operations Expected

Foundry Coke Higher but Furnace Coke Reduced—Coated Nails Advanced

Although it is probable that conservative influence in the labor world will prevail and that there will not be a general strike of iron and steel workers, the threatened suspension of work has been a disturbing factor in the market during the past week and still causes apprehension. A pleasing feature is the announced determination of unions having contracts with mills not to go on strike, and it is assured that even if the radicals prevail, the operation of many plants will not be seriously disturbed. It is possible that if the strike is declared off, workmen at some points may quit work, refusing to follow the advice of the conservative leaders.

The net result of the agitation is that little buying has been done. The desire of consumers and distributors to secure material has been more pronounced than in the earlier talks of strike, but so has been the hesitancy of the producers to add to their commitments.

The demand for pig iron is not now active, and an Illinois foundry inquiry for about 10,000 tons for delivery in the first half of next year thus gains prominence. Persistent reports of weakness of basic continue, and there is a limited demand for all steel-making irons. Stove manufacturers in the Central West are having difficulty in maintaining full operation on account of scarcity of molders. The demand for stoves in that part of the country is greater than the supply.

In coke the needs of foundries are sufficiently urgent to force prices upward 25c. and 50c. per ton, one late sale of 100 cars bringing \$6 per net ton. In furnace coke a swing in the opposite direction has taken place and prices for this quality have dropped 15c. per ton, growing largely out of the postponement of buying because of possible plant idleness resulting from a general strike.

Structural steel awards continue in promising volume. A total of 27,500 tons involved in large projects has been closed. The total business done in August was the best since July, 1918, 78½ per cent of the capacity of the bridge and structural shops of the country, or 141,300 tons being put under contract.

No allocation has yet been made of the 200,000 tons of rails which the Railroad Administration, it is thought, will buy at this time. The Inland Steel Co., in anticipation of heavy rail orders next year, has commenced the construction of a rail mill at Indiana Harbor. Meanwhile a Canadian mill is busy on 75,000 tons for American railroads.

Steel bars are still nominally at the 2.35c., Pittsburgh basis, forward bookings being refused until commitments are reduced. Most of the 2.50c. business closed is for extended delivery.

Coated wire nails have now joined the otherwise strong wire products group and on 1500 kegs \$3.10 has been done or 25c. above the regular market.

On ship material the Government has again obtained base quotations of 2.50c., Pittsburgh, for plates and 2.40c. for shapes. The former price is widely possible on attractive lots, but 2.45c. is the general market for structural material. Lake shipyards are figuring on boats which will take 40,000 tons of plates. Plate mills are generally operating at 60 to 75 per cent of capacity, except in the East, where they are making only half their possible output.

Buyers for oil well developments have been pressing to get covered owing to the imminent stoppage of steel plants. Demand for oil pipe promises to last over at least two years.

Tin plate makers, with stocks in consumers' hands now well exhausted, look to having a banner year in 1920. The leading producer is about sold out for this year and is operating at 95 per cent of capacity. Sheet mills tell a similar tale and buyers are seeking with little or no success to cover for the first quarter of next year. Black sheets have sold in the Central West for \$3 above regular prices.

The effect of the adverse exchange situation is indicated in the cancellation of 30,000 tons of billets that were practically closed for export. In galvanized wire and wire rods 5000 tons was sold for the Far East and 6000 tons of light rails for Brazil. Belgium wants 400 locomotives involving 12,000 tons of plates and quotations are out on about 40,000 tons of ship plates for Japan. A favorable offer of vessel space may make it possible to close on a round tonnage of pig iron for Belgium. Our British cable emphasizes that there is an active demand for tin plates from Roumania and Germany.

Pittsburgh

PITTSBURGH, Sept. 16.

A very important conference of labor leaders connected with the proposed steel strike, scheduled to start on Monday, Sept. 22, is to be held in this city to-morrow (Wednesday). At the offices of the National Committee for organizing the iron and steel workers, in the Magee Building, this city, the statement is made that under no circumstances will the original program to start the strike on Sept. 22 be changed. However, it is known positively that the conservative element among the labor leaders is doing all in its power to avert the threatened strike, believing that, once it is started, it will certainly be lost, and may mean the complete disruption of the American Federation of Labor.

The official heads and operating managers of local steel companies do not seem to be greatly worried over the proposed strike. The companies will pursue the policy, if the strike is started, of shutting down tight any plants that may be crippled and allow them to remain idle until the men show a desire to return to work. The fact that the mills that signed the Amalgamated scales, embracing a number of bar iron mills, sheet and tin plate mills, will not be affected by the strike, is certainly not favorable to the plans of the leaders of the labor unions, who tried their best to get the men employed in these mills to go out on a sympathy strike, but were firmly refused. It is possible the strike may be deferred until after the conference, called by President Wilson, to be held in Washington on Oct. 6, but at this writing it looks very much as if

A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics

At date, one week, one month, and one year previous

For Early Delivery

	Sept. 16,	Sept. 9,	Aug. 19,	Sept. 17,
Pig Iron, Per Gross Ton:	1919	1919	1919	1918
No. 2 X, Philadelphia	\$30.60	\$30.60	\$29.60	\$34.40
No. 2 Valley furnace	26.75	26.75	26.75	33.00
Southern, Cin'ti.	31.10	31.10	31.10	36.60
No. 2, Birmingham, Ala	27.75	27.75	27.50	33.00
No. 2, furnace, Chicago*	26.75	26.75	26.75	33.00
Basic, del'd, eastern Pa.	26.60	26.60	26.60	32.90
Basic, Valley furnace	25.75	25.75	25.75	32.00
Bessemer, Pittsburgh	29.35	29.35	29.35	36.60
Malleable, Chicago*	27.25	27.25	27.25	33.50
Malleable Valley	27.25	27.25	27.25	33.50
Gray forge, Pittsburgh	27.15	27.15	27.15	33.40
L. S. charcoal, Chicago	32.75	32.75	32.75	37.85

Rails, Billets, Etc.

Per Gross Ton:				
Bess. rails, heavy, at mill	45.00	45.00	45.00	55.00
O-h. rails, heavy, at mill	47.00	47.00	47.00	57.00
Bess. billets, Pittsburgh	38.50	38.50	38.50	47.50
O-h. billets, Pittsburgh	38.50	38.50	38.50	47.50
O-h. sheet bars, P'gh	42.00	42.00	42.00	51.00
Forging billets, base, P'gh	51.00	51.00	51.00	60.00
O-h. billets, Phila.	42.50	42.50	42.50	51.30
Wire rods, Pittsburgh	52.00	52.00	52.00	57.00

Finished Iron and Steel,

Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Iron bars, Philadelphia	2.745	2.745	2.745	3.73
Iron bars, Pittsburgh	2.75	2.75	2.75	3.50
Iron bars, Chicago	2.62	2.62	2.62	3.50
Steel bars, Pittsburgh	2.35	2.35	2.35	2.90
Steel bars, New York	2.62	2.62	2.62	3.145
Tank plates, Pittsburgh	2.50	2.50	2.65	3.25
Tank plates, New York	2.77	2.77	2.92	3.495
Beams, etc., Pittsburgh	2.45	2.45	2.45	3.00
Beams, etc., New York	2.72	2.72	2.72	3.245
Skelp, grooved steel, P'gh	2.45	2.45	2.45	2.90
Skelp, sheared steel, P'gh	2.65	2.65	2.65	3.25
Steel hoops, Pittsburgh	3.05	3.05	3.05	3.50

*The average switching charge for delivery to foundries in the Chicago district is 50c. per ton.

†Silicon, 1.75 to 2.25. ‡Silicon, 2.25 to 3.75.

Sheets, Nails and Wire.

Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Sheets, black, No. 28, P'gh.	4.35	4.35	4.35	5.00
Sheets, galv., No. 28, P'gh.	5.70	5.70	5.70	6.25
Wire nails, Pittsburgh	3.25	3.25	3.25	3.50
Fence wire, base, P'gh.	3.00	3.00	3.00	3.25
Barb wire, galv., P'gh.	4.10	4.10	4.10	4.35

Old Material,

Per Gross Ton:				
Carwheels, Chicago	\$24.00	\$24.00	\$26.00	\$29.00
Carwheels, Philadelphia	24.50	24.50	24.50	29.00
Heavy steel scrap, P'gh.	29.00	19.50	20.50	29.00
Heavy steel scrap, Phila.	18.50	18.50	19.00	29.00
Heavy steel scrap, Ch'go	18.50	18.50	20.00	29.00
No. 1 cast, Pittsburgh	23.50	23.50	23.50	29.00
No. 1 cast, Philadelphia	25.00	25.00	25.00	29.00
No. 1 cast, Ch'go (net ton)	23.50	24.00	24.00	30.00
No. 1 RR. wrot., Phila.	26.50	26.50	26.50	34.00
No. 1 RR. wrot., Ch'go net	19.00	19.00	20.50	29.75

Coke, Connellsville,

Per Net Ton at Oven:				
Furnace coke, prompt	\$4.60	\$4.75	\$4.50	\$6.00
Furnace coke, future	4.75	4.75	4.12	6.00
Foundry coke, prompt	6.00	5.50	5.50	7.00
Foundry coke, future	5.75	5.75	5.50	7.00

Metals,

Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Lake copper, New York	23.00	23.00	24.00	26.00
Electrolytic copper, N. Y.	22.50	22.50	23.50	26.00
Spelter, St. Louis	7.15	7.35	7.75	9.50
Spelter, New York	7.50	7.70	8.10	9.85
Lead, St. Louis	6.00	5.75	5.50	7.75
Lead, New York	6.25	5.90	5.90	8.05
Tin, New York	56.50	56.50	57.00	78.50
Antimony (Asiatic), N. Y.	8.50	9.25	9.25	14.00
Tin plate, 100-lb. box, P'gh.	\$7.00	\$7.00	\$7.00	\$7.75

the radical labor leaders would insist on starting the strike next Monday.

The threatened labor troubles have held back to some extent the placing of business, many mills not being willing to take on more orders until it is known just how far the strike may affect operations. Sheet and tin plate mills are not likely to be seriously disturbed. Prices are firm, but are not any higher.

The demand for furnace coke is light, and prices have eased off about 15c. per ton. Scrap is neglected, consumers not buying, and prices are soft. Heavy steel scrap has settled down to about \$19 delivered, but there is no buying.

Pig Iron.—The local market is very quiet, and the few sales of pig iron being made are confined mostly to foundry grades, the demand for which is fairly active. Reports are that several Valley producers are offering basic iron at about 25c. per ton under the regular price, but these reports are not confirmed. Furnaces owned by the steel companies are not trying to sell iron, while the merchant furnaces report they are well sold up over the remainder of this year and are not actively pushing sales. Only one stack out of 25 in the Mahoning Valley is idle, this being Niles of Carnegie Steel Co., and it may start late this month. There have been some fair-sized sales of foundry iron for delivery over the remainder of the year at the regular price of \$26.75 at Valley furnace. For this year delivery we quote:

Basic pig iron, \$25.75; Bessemer, \$27.95; gray forge, \$25.75; No. 2 foundry, \$26.75; No. 3 foundry, \$26.25, and malleable, \$27.25; all per gross ton at Valley furnaces, and freight rate for delivery in the Cleveland and Pittsburgh districts being \$1.40 per ton.

Ferroalloys.—The price of \$95 c.i.f. on English ferromanganese was in effect only two or three days, and it is now understood that English producers are holding at \$105 c.i.f., but this price is higher than the delivered price for domestic, and the chances for sales of English material are slight. Domestic producers of 78 to 82

per cent ferromanganese are now said to be holding for \$108 delivered, but the Brier Hill Steel Co. has bought 300 to 400 tons for this year's delivery at a price somewhat under that figure. Some sellers are still quoting 50 per cent ferrosilicon at \$80 delivered, but a sale of 100 tons is said to have been made recently at about \$81 delivered.

We quote 78 to 82 per cent domestic ferromanganese \$108 delivered, with a reduction of \$1.50 to \$1.75 per unit for lower percentages. We quote 50 per cent ferrosilicon at \$85, and 18 to 22 per cent spiegelisen at \$32 to \$35, delivered. Prices on Bessemer ferrosilicon are: 9 per cent, \$47.75; 10 per cent, \$49.75; 11 per cent, \$53.05; 12 per cent, \$56.35. We quote 6 per cent silvery iron, \$36.75; 7 per cent, \$38.50; 8 per cent, \$40.25; 9 per cent, \$42.25, and 10 per cent, \$44.75. About \$3 per gross ton advance is charged for each 1 per cent silicon for 11 per cent and over. All the above prices are f.o.b. maker's furnace, Jackson or New Straitsville, Ohio, which have a uniform freight rate of \$2.90 per gross ton for delivery in the Pittsburgh district.

Billets and Sheet Bars.—The supply of sheet bars is still short, and the American Sheet & Tin Plate Co. is bringing upward of 25,000 tons from Gary, Ind., to its mills in the Pittsburgh district. The demand for billets and sheet bars is not very active, and possibly on a desirable order for billets the regular price might be slightly shaded. It is not believed here that the threatened strike will seriously curtail output of the steel mills. The demand for forging billets and blooms is active, and regular prices are firm. We quote:

We quote 4 x 4 in. soft Bessemer and open-hearth billets at \$38.50, 2 x 2 in. billets at \$42; sheet bars, \$42; slabs, \$41, and forging billets, \$51 base, all f.o.b. at mill, Pittsburgh or Youngstown.

Structural Material.—Inquiry has quieted down a good deal, probably due to the threatened steel strike. The American Bridge Co. has taken 2750 tons for the new plant for the Aluminum Co. of America at Marysville, Tenn., also two steel barges, 500 tons for the Standard Coal Co. of California, and six oil barges, 900 tons, for the Standard Oil Co. of Louisiana. The

McClintic-Marshall Co. has taken 800 tons for the new plant of the Corn Products Refining Co., Edgewater, N. J., and 550 tons for a factory building for the Chevrolet Motor Co., Flint, Mich., and the Fort Pitt Bridge Works, 200 tons for a chemical plant for the Virginia-Carolina Chemical Co., Charleston, S. C. We quote plain material at 2.45c., Pittsburgh.

Plates.—It is now said that on anything like desirable orders there is little trouble in placing tonnage at 2.50c. at mill, but on general run of business, 2.65c. is still being quoted. The steel car companies are taking more plates than for some time, but the general demand is still far short of being large enough to give the plate mills full work, and they are operating only from 60 to 75 per cent of capacity. The Pressed Steel Car Co. has placed with local mills 4000 to 5000 tons of plates and shapes for 500 steel cars which this company is building for shipment to South Africa. We now quote sheared tank plates at 2.50c. to 2.65c., f.o.b. Pittsburgh, the lower price being made by all the mills on desirable orders.

Iron and Steel Bars.—The demand for steel bars is still very heavy, and three or four of the larger mills are sold up for the remainder of this year, being six to eight weeks behind in shipments. The Cambria Steel Co. is quoting 2.50c. on steel bars, and taking some business at that price, but mostly for extended delivery. The demand for iron bars is also active, and two local mills are said to be well sold up over the remainder of this year.

We quote steel bars, rolled from billets, at 2.35c. and from old steel rails, 2.45c. Pittsburgh mills rolling iron bars quote at 2.75c., Pittsburgh, plus full freight rate to point of delivery.

Sheets.—Most mills are well sold up for the remainder of this year, but a few have some galvanized and blue annealed for shipment in the last two months. The leading interest is about out of the market as a seller for the remainder of this year, and this week is operating 96½ per cent of its hot sheet mill capacity. So far as known, none of the mills is selling for delivery in first quarter, but nearly all makers are being importuned by large customers to cover them for that period. The supply of sheet bars is scarce, and the American Sheet & Tin Plate Co. is bringing from Gary, Ind., about 2500 tons of sheet bars per week for its various mills, being unable to get a full supply from its regular sources. Prices are reported as being firmly held, but it is believed very few sheets have brought premiums thus far. The export demand is good, and the larger mills are not quoting, having all they can do to take care of domestic customers. Prices are given on page 813.

Tin Plate.—The leading interest is about sold up on output of tin plate this week and is operating to about 96 per cent. The demand is light, as the large users are covered and specifications are heavy. Next year is regarded by leading makers as likely to be the best year in point of consumption of tin plate that the trade has ever known. Stocks were well cleaned up by all consumers and the mills as well, and the trade will enter the new year with very light stocks on hand. There is a steady export demand for tin plate, mostly from the Orient, and orders ranging from 10,000 to 25,000 boxes, or more, are being placed.

Rods.—Mills report the domestic demand active, but a few have rods to spare, needing their entire output for their own wire mills. The export demand is also active, and two mills are quoting five dollars per ton higher for export rod than for domestic. A leading consumer is said to have covered its entire needs of chain rods for last quarter at the regular price of \$52 at mill. Prices are given on page 813.

Wire Product.—Shipments and output this month have been fully as heavy as in the same period in August, but the demand is less, as jobbers and consumers are pretty well covered over this year. We note a sale of 1500 kegs of coated nails for last quarter at \$3.10 per keg at mills, this price being 25c. per keg higher than the regular market. The leading interest is still about \$5 per ton lower in prices than the individual mills, but is said to have very little wire or

nails for delivery this year. There is an active foreign demand, but local mills are not quoting, being well filled with orders. Prices are given on page 813.

Hoops and Bands.—The demand for steel bands is reported as very active, but for hoops as only fair. The Cambria Steel Co., which is still quoting \$3.30 on hoops and bands, is taking some orders. We quote hoops and bands at \$3.05, f.o.b. Pittsburgh, with usual extras.

Spikes.—Makers report a heavy demand for small spikes and have orders ahead for two or three months. Very little is being done in standard spikes, and the demand for boat spikes is only fair.

We quote standard spikes, 9/16 x 4 1/4 in., at \$3.35 base per 100 lb. in carload lots of 200 kegs of 200 lb. each, and small spikes, 3/8 in., 7/16 in. and smaller, at \$3.85 to \$4 per 100 lb. in carload lots of 200 kegs of 200 lb. each, plus usual extras. Boat and barge spikes, \$3.85 to \$4 per 100 lb. in carload lots of 200 kegs of 200 lb. each, all f.o.b. Pittsburgh. For less than carloads, 1c. per lb. higher is asked.

Hot-Rolled Strip Steel.—Mills report they are pretty well sold up over this year, but two or three have some material to spare for the last two months. Specifications are coming in freely. We quote hot-rolled strips for stamping and deep drawing purposes at 3.30c., Pittsburgh.

Cold-Rolled Strip Steel.—Makers report they have taken a large amount of business for last quarter, and are pretty well sold up over this year. Specifications are active, and prices reported as firm.

We quote cold-rolled steel at \$5.65 base per 100 lb., f.o.b. Pittsburgh, for 1 1/2-in. and wider, 0.100 in. and thicker hard tempered in coils 0.20 carbon and under. Boxing charge 25c. per 100 lb.

Cold Finished Steel Bars.—Makers continue to report that the bulk of the business in shafting is coming from automobile builders and makers of automobile parts, but lately the demand from the implement trade has been a little better. Operations are said to be on a basis of about 75 per cent of capacity.

Nuts and Bolts.—Some large consumers and jobbers are covering their needs for last quarter, the makers of nuts and bolts having recently opened their books for business for that delivery. Two local makers report they are now operating full and are well fixed with orders for this year. It is said discounts, as in effect from Aug. 4, are being firmly held by all makers. These discounts are given on page 813.

Rivets.—A meeting of rivet makers will be held in New York Sept. 17, but it is not known whether any important action will be taken. Consumers and jobbers are now placing contracts for last quarter, and the demand, so far this month, is stated to be as heavy as in the same period in August. Prices are fairly firm, but in some cases are being shaded. We quote large structural and ship rivets at \$3.90 and large boiler rivets at \$4 base, f.o.b. Pittsburgh.

Iron and Steel Pipe.—In view of the uncertainty of the labor situation, and possible suspension of operations to some extent by the strike, ordered to take effect Sept. 22, mills making iron and steel pipe feel they have all the business on their books they care to take and are turning down nearly all the orders offered, stating they can not make the delivery wanted. On lap weld pipe, the National Tube Co. is filled for seven or eight months, and other mills over remainder of this year. The Sinclair Oil & Refining Co. recently placed about 50 miles of 8-in. line pipe with a Youngstown, Ohio, mill and also placed a large quantity of oil pipe and oil well tubular goods with a Chicago mill. Present heavy oil developments promise to last over the next two years at least, and mills making oil pipe and oil well supplies are expecting an active business for that period. It is said that in Texas alone the territory embracing the Ranger and Burke Burnette fields, which is said to be 40 miles wide by 160 miles in length, has hardly been scratched. The amount of tubular goods entering into an oil well drilled 3500 to 4000 feet is much larger than generally believed by those unfamiliar with oil well drilling operations. No advance in prices is looked for, and the mills are

steadily declining premiums offered for quick shipments of line pipe and oil well goods, trying to serve their regular customers at regular prices as best they can. Discounts on iron and steel pipe are given on page 813.

Boiler Tubes.—The demand for locomotive and boiler tubes is fairly heavy, but for merchant tubes is only fair. Some concessions in prices are still being made, in the way of freight allowances, which are absorbed by the mills. Discounts are given on page 813.

Coke.—The demand for prompt furnace coke has been lighter in the past week than for some time, due to the unwillingness on the part of furnaces to buy on account of the uncertainty as to the effect of the strike, ordered to start on Sept. 22. Prices on standard grades of prompt furnace coke have eased off to some extent, on account of larger supply and the limited demand. Nothing is being done in contracts, but the Midvale Steel & Ordnance Co. has an inquiry in this market for 10,000 tons per month of standard grade furnace coke for last quarter, and first quarter of next year, while the Reading Iron Co. has an inquiry for 3,000 to 6,000 tons per month for the same delivery. However, neither company has closed, and both now say they will wait until early in October on account of the threatened labor troubles. It is said several large producers of standard coke are willing to contract for last quarter and first quarter delivery on the basis of five and one-half tons of coke for a ton of basic iron, which figures out \$4.69 per net ton of coke at oven. The smaller producers are not willing to quote for extended delivery, on account of uncertain labor costs. The demand for foundry coke is very active, and prices are firm for standard grades of 72-hr. at \$6 per net ton at oven for prompt delivery. We now quote standard grades of 48-hr. blast furnace coke for prompt shipment at \$4.65 to \$4.75, and standard grades of prompt 72-hr. foundry coke at \$6 per net ton at oven. We note sales of upwards of 100 cars of foundry coke in the past few days at the \$6 price.

Old Material.—The local market is very dull, and consumers are not interested, largely owing to the uncertainty of what the threatened strike may develop. The supply of available scrap is limited, and in spite of the fact that there is no demand from consumers, prices are fairly firm. There is a scarcity in supply of cast iron borings, and some dealers are said to be offering as high as \$16 for this to cover shortage. Turnings are dull and weak, which also is true of low phosphorus melting scrap. Bids on the Baltimore & Ohio Railroad scrap list have come in, and awards were made on Sept. 15, but it is not known to whom the scrap was sold. The principal items in the B. & O. list were 600 tons of steel axles, 400 tons of steel couplers and knuckles, 600 tons of No. 2 cast steel and 600 tons of old wheels. It is probable a good part of this scrap went to consumers direct, which has been the case for several months past.

Heavy steel, melting. Steubenville, Follansbee, Brackenridge, Monessen, Midland and Pittsburgh, de- livered	\$19.00 to \$19.50
No. 1 cast for steel plants.....	23.50 to 24.00
Rerolling rails, Newark and Cam- bridge, Ohio; Cumberland, Md.; Franklin, Pa., and Pittsburgh.....	25.00 to 25.50
Compressed steel	18.00 to 19.00
Bundled sheet, sides and ends, f.o.b. consumers' mills, Pittsburgh dis- trict	15.50 to 16.00
Bundled steel stamping.....	13.00 to 13.50
No. 1 busheling.....	18.00 to 18.50
Railroad grate bars.....	18.00 to 18.50
Low phosphorus melting stock (bloom and billet ends, heavy plates) $\frac{1}{4}$ in. and heavier	25.00 to 25.50
Iron car axles	31.00 to 32.00
Locomotive axles, steel.....	31.00 to 32.00
Steel car axles.....	28.00 to 29.00
Railroad malleable	20.00 to 20.50
Cast iron wheels.....	23.50 to 24.00
Rolled steel wheels.....	22.00 to 23.00
Machine-shop turnings.....	12.25 to 12.50
Sheet bar crop ends (at origin).....	23.00 to 24.00
Heavy breakable cast.....	21.50 to 21.75
Cast iron borings.....	15.75 to 16.00
No. 1 railroad wrought.....	22.00 to 23.00

Manufacturers Suggest an Armistice

Stephen C. Mason, president National Association of Manufacturers, with a membership of about 5000, has submitted a plan to President Wilson suggesting an industrial armistice, for consideration at the Oct. 6 labor conference in Washington. Stating that strikes during the past eight months have cost the public in the neighborhood of \$10,000,000 a day in lost wages, President Mason suggests in his plan "a joint gentlemen's agreement," to remain in force until the present period of industrial adjustment is declared at an end. To make the agreement more binding, it is suggested that a joint committee of labor and industry be appointed or elected to formulate the plan, and that it be made legal by an act of Congress. This committee, with seven labor members and seven members representing organized industry, should be empowered to adjust all disagreements and enforce its decisions.

In outlining the plan, President Mason suggests that organized industry should agree not to reduce wages during the armistice and to submit all matters of difference to the committee appointed for the purpose. Organized labor should agree to a policy of non-interrupted production and to place before the proper authorities any matters needing adjustment.

Lake Iron Ore Shipments in August

Shipments of iron ore from the Lake Superior region in August were small as compared with those for August in 1918 and 1917. This year they were 4,423,133 gross tons, which compare with 10,146,786 tons and 9,725,331 tons in August, 1917 and 1918. The decrease from last year was therefore 5,302,198 tons. The totals by ports, with season shipments, and a comparison with 1918, are given below:

	August, 1919	August, 1918	To Sept. 1, 1919	To Sept. 1, 1918
Escanaba	336,334	1,168,604	2,757,897	4,011,481
Marquette	277,843	592,073	1,169,569	2,276,092
Ashland	375,245	1,209,394	3,320,080	4,582,509
Superior	939,979	2,146,689	6,426,447	9,197,933
Duluth	1,643,788	3,243,806	11,466,924	13,156,893
Two Harbors	847,944	1,364,765	4,464,054	6,109,356
Total.....	4,423,133	9,725,331	29,604,981	39,334,264

The decrease in season shipments to Sept. 1, 1919, has been 9,729,283 tons, as compared with an increase for the same period a year ago of 2,810,710 tons.

Receipts at other than Lake ports were 878,567 tons in August and 6,002,283 tons for the season, which compare with 2,142,753 tons and 8,490,758 tons for one year previous respectively.

Vom Baur Electric Furnace Sold to Japan

C. H. Vom Baur, manufacturer of the Vom Baur electric steel furnace, has sold a one-ton furnace to Mitsubishi Tosen Kaisha, Kobe, Japan. It is to be equipped with automatic electrode apparatus, 600 kw. and a basic bottom. Mr. Vom Baur has opened new offices at 1136 Park Row Building, New York, and besides looking after his furnace interests, is doing business as consulting steel plant engineer. He is collaborating with the Japanese company mentioned in connection with extensions to this company's steel foundries and shipbuilding plant.

The Midvale-Cambria Co. has purchased the Allen Endicott property, Main and Portland streets, Cambridge, Mass., and will erect thereon a warehouse, two stories, 63 x 152 ft., for carrying in stock tool and carbon steel bars and deformed reinforcing bars. Building operations will start in about a month, estimates now being figured on. The building will be of steel construction.

The new million dollar experimental laboratories of the Bureau of Mines, Department of the Interior, at Pittsburgh, will be dedicated by the bureau in co-operation with the Pittsburgh Chamber of Commerce with appropriate ceremonies on Sept. 29, 30 and Oct. 1.

Chicago

CHICAGO, Sept. 16.

Contradictory reports regarding the intentions of organized labor make it uncertain whether the steel strike will take place as called on Sept. 22. If the strike does come, it is a question whether it will force a suspension of operation, as many employees are known to be loyal and out of sympathy with the efforts of the union organizers. The fact that several attempted meetings of iron and steel workers in this district have proved failures is regarded as a hopeful sign. In the meantime, business is good and operation satisfactory. In addition to the lot of 200,000 tons of rails just placed in this country by the Railroad Administration, about 75,000 tons are now being rolled for American roads by a Canadian mill. In anticipation of heavy rail orders next year, the leading independent will soon commence the construction of a rail mill at Indiana Harbor.

Mills are well sold ahead on steel bars, sheets, wire products and bolts and nuts, but can take care of additional business in plates, structurals and track supplies. Orders are predominantly from domestic sources. An order for 30,000 tons of billets which had practically been closed by a local mill was canceled on account of the exchange situation. While exchange is a disturbing factor as regards European business, it has not affected exports to certain Oriental countries. A local producer has recently sold 5000 tons of galvanized wire and wire rods for shipment to the Far East. The American Bridge Co. will fabricate 18,000 tons for a Cleveland bank, this constituting by far the largest structural award made in the Central West for many months.

Two inquiries for 1920 pig iron aggregating from 10,000 to 12,000 tons are before the trade. Scrap continues weak.

Ferroalloys.—It is reported that a local consumer has purchased 200 tons of 50 per cent ferrosilicon at \$90 delivered, but confirmation is lacking. On Sept. 24 the Government will offer 2034 tons of 18 to 22 per cent spiegeleisen located at the Scullin Steel Co. plant, St. Louis. In general, all the ferroalloys are quiet.

We quote 80 per cent ferromanganese at \$110, delivered; 50 per cent ferrosilicon, at \$80, delivered; spiegeleisen, 18 to 22 per cent, \$35, furnace.

Pig Iron.—With the exception of a few inquiries, the market is rather quiet both as regards deliveries during the remainder of the year and in the first half of 1920. Those now inquiring for first half iron include an Illinois foundry, which wants 8900 to 10,400 tons, and a Wisconsin melter, who is asking for prices on 1500 tons. The former inquiry in detail calls for 2800 tons of foundry, 2.25 to 2.75 per cent silicon, 2400 tons 2.75 to 3.25 per cent, 1200 tons of silvery, 6 to 8 per cent, and from 2500 to 4000 tons of malleable. The Wisconsin foundry, on the other hand, wants 500 tons of foundry, 1.75 to 2.25 per cent silicon, 300 tons of high manganese Southern foundry, 2.75 to 3.25 per cent silicon, 500 tons of malleable and 100 tons each of charcoal and silvery as well as 1000 tons of foundry coke. In addition to these melters, two large consumers in this district are about to contract for their first half requirements. Foundries which have not yet secured their full needs for the remainder of this year are experiencing difficulty in placing orders because of the heavy bookings of the furnaces. Some of the new business which is being placed is going to stacks located outside this district. Two hundred and fifty tons of Southern foundry, largely 3.25 to 3.75 per cent silicon, was recently sold to an Illinois melter. Other recent sales involve about 1000 tons of Northern machine cast pig iron taking a freight rate of \$3.30 to Chicago. This iron was sold at a base of \$27.50, furnace, subject to an addition of \$2 for material with silicon content of 2.25 to 2.75 per cent and \$3 for 2.75 to 3.25 per cent silicon. The demand for silvery is still active. The Jackson County strike, which appeared to

be nearing a settlement a week ago, is still in effect. The Milton furnace, Wellston, Ohio, is said to be practically sold out for the remainder of the year.

The following quotations are for iron delivered at consumers' yards, except those for Northern foundry, malleable and steel-making irons, including low phosphorus, which are f.o.b. furnace and do not include a switching charge averaging 50c. per ton.

Lake Superior charcoal, average silicon, 1.50	
second half delivery, f.o.b. furnace, average freight to Chicago, \$2.50 (other grades subject to usual differentials)	\$30.35
Northern coke foundry, No. 1 silicon, 2.25 to 2.75	29.00
Northern coke foundry, No. 2 silicon, 1.75 to 2.25	26.75
Southern coke, No. 1 foundry and No. 1 soft, silicon, 2.75 to 3.25	35.75
Southern coke, No. 2 foundry, silicon, 2.25 to 2.75	34.00
Southern foundry, silicon, 1.75 to 2.25	32.50 to 32.75
Malleable, not over 2.25 silicon	27.25
Standard Bessemer	27.95
Basic	25.75
Low phosphorus (copper free)	40.00
Silvery, 7 per cent	42.05

Plates.—Business is encouraging, although not as brisk as in some other steel products. An Eastern mill has booked an order for 1500 tons of universal plates as well as a number of orders for sheared plates aggregating several hundred tons. A rather disquieting report has come from the Pacific Coast to the effect that the Albina Engineering & Machine Works, a shipbuilding firm with five ways in Portland, Ore., is dismantling its plant because of the difficulties of operating in the face of ceaseless labor trouble. A local car builder has purchased 200 tons of plates and shapes to be used in the construction of 15 baggage cars for the Southern Pacific Railroad. The Tremont & Gulf Railroad is in the market for 10 flat cars and the Baltimore & Ohio is inquiring for eight 50-ton steel hopper cars. M. C. Fairchild & Co., New York, is asking for figures on 50 20-ton gondola cars for export.

The mill quotation is 2.50c. to 2.65c., Pittsburgh, the freight to Chicago being 27c. per 100 lb. Jobbers quote 3.67c. for plates out of stock.

Bars.—The demand for mild steel and rail carbon bars is in excess of the supply. The foremost local independent and a large Ohio producer are out of the market for the remainder of the year and other mills are rapidly approaching that condition. One producer in this district has advanced soft steel bars to 2.50c. Pittsburgh, because it could not make a profit at the prevailing price. Bar iron continues dull. A local mill which had suspended operation for two weeks resumed activity yesterday with about ten days' work in sight.

Mill prices are: Mild steel bars, 2.35c., Pittsburgh, taking a freight rate of 27c. per 100 lb.; common bar iron, 2.62c., Chicago; rail carbon, 2.55c. mill. Jobbers quote 3.37c. for steel bars out of warehouse.

Cast Iron Pipe.—The demand is beginning to decline because of the approaching close of the pipe-laying season in the Northern States. The United States Cast Iron Pipe & Foundry Co. has booked 1800 tons of 30-in. pipe from Salt Lake City, Utah. Detroit will receive bids on 5000 tons of 6 to 24-in., principally the latter, on Sept. 18. Columbus, Ohio, will consider tenders on 650 tons, chiefly 36-in. pipe, on Sept. 29.

We quote per net ton, f.o.b. Chicago, ex-war tax, as follows: Water pipe, 4½-in., \$58.80; 6-in. to 16-in., \$55.80; class A and gas pipe, \$2 extra.

Bolts and Nuts.—The market is characterized by a heavy demand and a diminishing supply. The situation is intensified by a shortage of labor and raw materials in the plants of the manufacturers. For mill prices see finished iron and steel, f.o.b. Pittsburgh, page 813. Jobbers quote:

Structural rivets, 4.72c.; boiler rivets, 4.82c.; machine bolts up to $\frac{1}{2}$ x 4 in., 50 and 5 per cent off; larger sizes, 40 and 5 off; carriage bolts up to $\frac{1}{2}$ x 6 in., 45 and 5 off; larger sizes, 30 and 10 off; hot pressed nuts, square tapped and hexagon tapped, \$1.85 off; coach or lag screws, gimlet points, square heads, 50 and 5 per cent off. Quantity extras for nuts are canceled.

Sheets.—Mills are still receiving numerous inquiries with which they can do little owing to the fact that many of them are sold out for the remainder of the year and the bookings of others are not far behind. A local interest has booked about 700 tons to be used in lining 500 refrigerator cars which will be built by Armour & Co. Mills are showing little inclination to quote for delivery in 1920. An oil interest, however, which recently inquired for 1000 tons of sheets for shipment next year, is reported to have received two quotations.

Mill quotations are 4.35c. for No. 28 black, 3.55c. for No. 10 blue annealed, and 5.70c. for No. 28 galvanized.

Jobbers quote Chicago delivery out of stock: No. 10 blue annealed, 4.57c.; No. 28 black, 5.62c., and No. 28 galvanized, 6.97c.

Structural Material.—The American Bridge Co. will fabricate 18,000 tons for a bank to be built by the Citizens Savings & Trust Co., Cleveland. This is by far the largest fabricating award made in the Central West for months. Although there are no comparable projects in the Chicago district, there are numerous current awards and inquiries of moderate proportions which, in the aggregate, involve considerable steel. The local building trades lockout is still in effect, but a vote now being taken by the carpenters' union may result in its termination. Recent fabricating awards include:

Minneapolis, Franklin Avenue bridge, 580 tons, to Minneapolis Steel & Machinery Co.

Cedar Avenue bridge, Minneapolis, 554 tons, to Illinois Steel Bridge Co.

Convent, Donaldson, Ind., 400 tons, to A. Bolters' Sons, Chicago.

Hull Theatre and Office Building, Peoria, Ill., 254 tons, to Decatur Bridge Co.

Fuller & Johnson Mfg. Co., machine shop, Madison, Wis., 250 tons, to Worden Allen Co.

Lyndale Avenue bridge across Mississippi River, Savage, Minn., 238 tons, to W. S. Hewett.

Chicago, Rock Island & Pacific Railroad, deck girder spans, 231 tons, to American Bridge Co.

Nash Motors Co., new plant, Milwaukee, 350 tons, to Northwestern Bridge & Iron Co.

Austin Mfg. Co. Plant, Harvey, Ill., 150 tons, to Kenwood Bridge Co.

Current inquiries include:

Diamond Economy Process Company, Depere, Wis., plant addition, 600 tons.

Chain Belt Co., plant addition, Milwaukee, 200 tons.

Iowa State Fair Grounds, Des Moines, cattle barns, 200 tons.

The mill quotation is 2.45c., Pittsburgh, which takes a freight rate of 27c. per 100 lb. for Chicago delivery. Jobbers quote \$3.47 for materials out of warehouse.

Ford Motor Co., sand storage building, River Rouge, Mich., 3200 tons; and foundry building, 12,000 tons.

Inland Steel Co., sheet and tin plate mill, Indiana Harbor, Ind., 5000 tons.

Wire Products.—Consumers are finding it increasingly difficult to place their remaining requirements for this year. Inquiries are numerous, some of them coming from abroad. A local manufacturer recently booked orders for 5000 tons of galvanized wire and wire rods for export to the Orient. For mill prices see finished iron and steel, f.o.b. Pittsburgh, page 813.

Rails and Track Supplies.—It is assumed that part of the recent order of 200,000 tons of rails by the Railroad Administration will be rolled at Gary. Incidentally this purchase will mean the placing of necessary track fastenings. There continues to be a fair amount of business in light rails. Local rail capacity will be increased as the result of the construction of a mill by the leading independent at Indiana Harbor. This structure, which was mentioned in the structural paragraph a week ago, is expected to be completed next spring. The Inland Steel Co. has already sent out inquiries for rail and splice bar equipment. Another interesting development is the fact that the foremost interest is now rolling steel ties for industrial and electric railroads.

Standard railroad spikes, 3.35c., Pittsburgh. Track bolts with square nuts, 4.35c., Pittsburgh. Steel tie plates and iron angle bars, 2.75c., Pittsburgh and Chicago; tie plates, iron, 2.90c., f.o.b. makers' mills. Light rails, 2.45c., f.o.b. makers' mills, with usual extras.

Old Material.—Prices are steadier than a week ago, although a few items show further declines. Consumers are not showing much interest in the market and on the other hand dealers are inclined to conserve their stocks in the belief that prices will rise later. It is reported that 5000 tons of shell scrap have been pur-

chased here by a Cleveland steel mill, while about 1000 tons of railroad malleable was recently bought by a large local consumer at \$20.50 per gross ton, the equivalent of \$18.30 net. Otherwise no transactions of consequence are known to have taken place. The local storage depot of the Ordnance Department has re-advertised 10,000 tons of shell forgings, bids on which were recently rejected. Tenders on this material will be received Sept. 25. On Sept. 22 figures will be taken on 587 tons of 3-in. and 324 tons of 1 11/16 in. hexagon Bessemer screw stock. The St. Louis depot is offering 7543 tons of shell forgings and the Detroit office 9232 tons of the same material. Current railroad lists are small. The Chicago Great Western offers 300 tons, the Lake Erie & Western a blank list and the Michigan Central and the Elgin, Joliet & Eastern small tonnages.

We quote delivery in buyers' yards, Chicago and vicinity, all freight and transfer charges paid, as follows:

	Per Gross Ton
Iron rails	\$24.00 to \$25.00
Relaying rails	35.00 to 45.00
Carwheels	24.00 to 25.00
Steel rails, reroiling	26.00 to 27.00
Steel rails less than 3 ft.	22.50 to 23.00
Heavy melting steel	18.50 to 19.50
Frogs, switches and guards, cut apart	18.50 to 19.50
Shoveling steel	18.50 to 19.00
	Per Net Ton
Iron angles and splice bars	\$23.00 to \$24.00
Steel angle bars	19.50 to 20.00
Iron arch bars and transoms	24.00 to 25.00
Iron car axles	28.00 to 29.00
Steel car axles	25.50 to 26.00
No. 1 busheling	16.00 to 16.50
No. 2 busheling	11.50 to 12.00
Cut forge	18.00 to 18.50
Pipes and flues	15.25 to 15.75
No. 1 railroad wrought	19.00 to 20.00
No. 2 railroad wrought	18.00 to 18.50
Steel knuckles and couplers	19.50 to 20.00
Coil springs	21.00 to 21.50
No. 1 cast	23.50 to 24.50
Boiler punchings	22.50 to 23.00
Locomotive tires, smooth	20.50 to 21.00
Machine-shop turnings	9.00 to 9.50
Cast borings	11.50 to 12.50
Stove plate and light cast	20.50 to 22.50
Grate bars	20.00 to 20.50
Brake shoes	18.50 to 19.50
Railroad malleable	18.25 to 19.25
Agricultural malleable	18.50 to 19.50
Country mixed	14.50 to 15.50

Navy Shapes and Plate Purchases

WASHINGTON. Sept. 16.—The Navy Department has awarded the contract for steel for the construction of destroyer tender Bobbin at the Philadelphia Navy Yard to the Carnegie Steel Co. The total approximates \$340,500. The chief unit prices follow: 400,000 lb. medium black rectangular steel plates, less than 10.2 lb. per sq. ft., 3.095c. per lb.; 3,964,700 lb. heavier medium black plates, 2.845c.; 200,000 lb. medium plates over 72 in. wide, 3.195c.; 1,035,000 lb. medium plates over 72 in. wide, 2.845c.; 1,620,500 lb. medium angles, 2.745c.; 773,000 lb. medium ship channels cambered and plain, 2.795c.; 355,000 lb. medium T bars, 2.795c.; 4000 lb. medium hollow half rounds, 3.695c. Deliveries are to be made at the rate of 700 tons per month. Prices are delivered at navy yard.

Plans of Baldwins, Ltd., for Canadian Extensions

At the annual meeting of Baldwins, Ltd., Swansea, Wales, held in Birmingham, England, extension plans in Canada were discussed. Col. John Roper Wright, chairman, moved that a resolution be adopted for the creation of 3,000,000 B class preferred shares of £1 each, to finance the proposed extension and improvement of property recently acquired in Toronto, Ont. The improvements refer to the recently acquired plant of the British Forgings, Ltd., munition manufacturer. Profits of Baldwins, Ltd., for the past year are said to be £345,293.

Cut Nail Plant to Resume

The E. & G. Brooke Iron Co., Birdsboro, Pa., will start its cut nail plant in operation Oct. 1. This mill is equipped with 75 cut nail machines having a monthly capacity of 8000 to 10,000 kegs. The output will include nearly all sizes of black and galvanized cut nails.

Philadelphia

PHILADELPHIA, Sept. 16.

Despite the conflicting reports as to whether there will be or will not be a steel strike on Monday, Sept. 22, the steel trade continues to take the view that a strike will not occur. As one steel man put it, "Gompers is too wise a general to permit a losing fight, and it certainly would be that for the steel workers." The outcome of the Boston police strike has created more confidence that the worst of the labor agitation has passed. The atmosphere will not be cleared, however, until after the labor conference in Washington Oct. 6 to 10, and meanwhile the steel companies, and particularly those in the Pittsburgh and Youngstown district having sales offices here, are exercising extreme caution in booking new business. In some instances orders for fourth-quarter delivery have been turned down and sales agents are keeping a firm check upon specifications from consumers. Attempts have been made by jobbers and others to over-specify on third-quarter contracts.

New business in steel products and pig iron is slowing up, but specifications on existing contracts are heavy, and most of the mills have full operating schedules on sheets and tinplate, wire products, pipe, bars and spikes. More business in plates, shapes and rails could be handled, but some of the plate and shape mills are fairly well booked for the present. Demand for foundry pig iron has fallen off sharply, while for steel-making grades there is no demand. Scrap is inactive and slightly weaker.

Pig Iron.—Demand for foundry iron has fallen off sharply, but melters are asking for quicker shipments, indicating that the melt is increasing. Most consumers are fairly well covered, however, up to the end of the year and it is not believed that there will be much more buying in this market until consumers begin to cover for first quarter and first half. Most of the furnaces are not anxious for business. They all have a comfortable volume of orders on their books and in the present uncertainties as to the labor and the cost of coke they prefer to exercise caution in selling ahead. One Virginia furnace will book orders only for shipment within the next 60 days. The Pennsylvania Railroad has bought 1000 tons of low silicon-high manganese iron for its Altoona, Pa., shops, this being the only sale of importance reported during the past week. Basic and low phosphorus irons are not in immediate demand.

The following quotations are for iron delivered in consumers' yards in Philadelphia or vicinity, except those for low phosphorus iron, which are f.o.b. furnace:

Eastern Penna. No. 2 X. 2.25 to 2.75 sil.	\$30.60 to \$31.10
Eastern Penna. No. 2 plain, 1.75 to 2.25 sil.	29.60 to 30.10
Virginia No. 2 X. 2.25 to 2.75 sil.	33.10
Virginia No. 2 plain, 1.75 to 2.25 sil.	32.10
Basic Gray forge Malleable Standard low phosphorus (f.o.b. furnace).... Copper bearing low phosphorus (f.o.b. fur- nace)	26.60 to 35.00 27.10 30.10 38.00 35.00

Coke.—Blast-furnace coke is quoted at \$4.75 to \$5 and foundry coke at \$5.75 to \$6.25, Connellsville.

Ferroalloys.—The action recently taken by American producers of ferromanganese to prevent dumping of British ferromanganese in this country at prices which, it is asserted, would put the American industry out of business has had the effect of checking sales of either the imported or domestic product. Consumers do not feel inclined to pay more than \$95, the price which the British are said to have put into effect, but as this price has been withdrawn for the present, at least, very little business is being done. The British price now is said to be \$105, Atlantic seaboard, but it is not reported that any sales have been made on this basis. The American price is still \$110, freight allowed to destination. There is no demand for spiegeleisen, which is nominally quoted at \$35 for the 18 to 22 per cent grade.

Semi-Finished Steel.—Most of the steel companies are

turning down preferred business in semi-finished steel. Sales of small lots of forging billets are being made by one company at prices ranging from \$51 to \$54, Pittsburgh, according to the delivery. An inquiry for 2000 to 3000 tons of forging billets for Canada is in the market. We quote 4 x 4 in. open hearth rerolling billets at \$42.50; forging billets at \$55 and slabs at \$45, all delivered Philadelphia.

Plates.—The Carnegie Steel Co. again bid 2.50c., Pittsburgh, on a tonnage of plates for the navy tender Dobbin, to be built at the Philadelphia Navy Yard. There is more of a disposition among sellers to recognize 2.50c. as the market price, though sales are still being made at 2.65c., Pittsburgh. The present attitude of some of the independent companies is that on a fairly large and attractive tonnage 2.50c. will be present, range from 2.55c. to 2.65c. The Pennsylvania Railroad Co. has placed about 3000 or 4000 tons of plates for car repairs. As high as 2.60c., Pittsburgh, was paid for a part of this tonnage. We quote sheared plates, $\frac{1}{4}$ in. and heavier, at 2.745c., delivered Philadelphia.

Structural Material.—Several large building projects are pending, but no definite action has been taken on the steel requirements. Work on some of these buildings will not be started until spring. The Bethlehem Steel Bridge Corporation will fabricate about 8000 tons for the dirigible hangar to be built for the Navy Department at Lakehurst, N. J. Shape mills have a fair amount of business on hand, but could take more. The bid of the Carnegie Steel Co. on shapes for the tender Dobbin to be built at the Philadelphia Navy Yard was 2.40c., Pittsburgh. We quote plain material at 2.695c., Philadelphia.

Sheets.—The demand for sheets has continued without abatement and most of the mills are in a comfortable position for the rest of the year. Some companies will take no more business until the uncertainties of the labor situation are out of the way. We quote No. 10 blue annealed at 3.795c.; No. 28 black at 4.595c., and No. 28 galvanized sheets at 5.945c., all delivered Philadelphia.

Cut Nails.—The E. & G. Brooke Iron Co., Birdsboro, Pa., will begin operation of its cut nail department on Oct. 1, having 75 cut nail machines with a monthly capacity of 8000 to 10,000 kegs. The plant of the Reading Iron Co., recently purchased from the George B. Lessig Co., is also ready to receive cut-nail orders.

Old Material.—It is expected that activity will not be resumed in the scrap market until the labor conference in Washington Oct. 6 to 10 has disposed of the present labor uncertainties. The mills are not buying, but only a slight weakness in prices has resulted as dealers are firm in their convictions that prices will go higher as soon as buying by the mills is resumed. We quote as follows for delivery at consumers' works in eastern Pennsylvania.

No. 1 heavy melting steel.....	\$18.50 to \$19.50
Steel rails, rerolling.....	25.00 to 26.00
No. 1 low phosphorus, heavy, 0.04 and under	25.00 to 26.00
Carwheels	24.50 to 26.00
No. 1 railroad wrought.....	26.50 to 27.50
No. 1 yard wrought.....	23.00 to 24.00
No. 1 forge fire.....	14.00 to 15.00
Bundled skeleton	15.00 to 16.00
No. 1 busheling	16.00 to 17.00
No. 2 busheling	13.00 to 14.00
Turnings (short shoveling grade for blast furnace use)	14.50 to 15.00
Mixed borings and turnings (for blast furnace use)	13.00 to 14.00
Machine-shop turnings (for rolling mill and steel works use)	15.00 to 16.00
Heavy axle turnings (or equivalent)	16.50 to 17.00
Cast borings (clean)	15.50 to 16.00
No. 1 cast	25.00 to 26.00
Railroad grate bars	21.00 to 22.00
Stove plate	20.50 to 21.50
Railroad malleable	20.00 to 21.00
Wrought iron and soft steel pipes and tubes (new specifications)	19.50 to 20.50
Ungraded pipe	15.00 to 16.00

Bars.—There is a continued and incessant demand for steel bars, which apparently is not being satisfied. Consumers who have been unable to place orders for

steel bars have bought bar iron in some instances, and the order books of the bar iron rolling mills have shown a marked improvement in the last few weeks. One mill which is out of the market on bars is quoting 2.50c., Pittsburgh, to discourage business. On a tonnage of bars for the Pennsylvania Railroad one bid was 2.45c., Pittsburgh, but other companies are reported to have bid 2.35c., Pittsburgh. Makers of bar iron state that higher prices are in prospect for fourth quarter. If a steel strike should occur, higher prices would be put into immediate effect. The Lebanon Valley Iron & Steel Co. has just put into operation at Lebanon, Pa., a new mill equipped with rotary puddling furnaces, which, it is stated, will materially decrease manufacturing costs. We quote soft steel bars at 2.595c. and bar iron at 2.745c., Philadelphia. Double refined bar iron is 3.745c., Philadelphia.

Birmingham

BIRMINGHAM, Ala., Sept. 15.

Pig Iron.—The middle of the month found the Birmingham pig iron market on a firm level of \$28 for 1.75 to 2.25 silicon, with no interest apparently undercutting. The week was rather quiet from a buying standpoint. The inquiry covered a large field, but the tonnage involved was not as great as during the preceding weeks. Experience of the Southern makers is that the market recovery has been a gradual and healthy one without marked purchasing movements. The sales have averaged pretty much the same volume week in and week out. Not a single interest had opened up for 1920 business up to to-day, but it was admitted that the period was near. General expectation is not so much for \$30 iron as it has been, but rather for a \$29 level. While Northern takers of Southern iron are understood to have protected themselves for the remainder of the year, many Southern interests have not and keep coming in for additional prompt tonnage, the pipe plants figuring conspicuously. The first real sound-out of the 1920 market was made during the week, when a large Southern consumer inquired for prices on 20,000 tons for first half requirements, several grades being named. At least five interests deny having made quotations, although something tentative was probably done. An inquiry for a round tonnage for Great Britain was submitted. The price of \$39 delivered in Britain was named. The reply was that \$34 was necessary to do business. With a \$10 freight rate export cannot be done and will not be considered as long as the domestic situation is as good as it is. Wire and wire fencing mills may be said to be swamped with orders and to be far behind in deliveries. All steel finishing plants are quite busy. The Birmingham district is philosophical about the threatened steel strike. It is not claimed that organization is near completion in this section and there is a confessed doubt by the union organizers as to whether the strike call would tie things up here. Car shortage seriously affects shipments, but operations have not been curtailed. The Woodward Iron Co. will blow in a large stack soon, one of the smaller Vanderbilt stacks being blown out. The make of the charcoal stack at Shelby, recently resuming, is understood to have been sold. We quote per gross ton, f.o.b. Birmingham district furnaces, as follows:

Foundry, silicon 1.75 to 2.25.....	\$28.00
Basic	27.00

Cast Iron Pipe.—Sanitary shops, almost without exception, are at capacity. Reports from brokers are to the effect that the demand will be good for two years pending the filling of the housing void. Operations of water, water and gas and soil pipe concerns are expanding. Texas is sending in considerable inquiry for oil pipe.

Coal and Coke.—All spot coke available is readily absorbed at \$9.50. Higher prices might be gotten, but makers appear to be satisfied with the good profit now being made. Coal production is around 70 per cent of capacity. There is no labor trouble anywhere in the field.

Old Material.—Cast scrap is quite strong and is moving in large quantities, while steel finds difficulty in

maintaining its recent level owing to competition between Birmingham and nearby dealers, which has resulted in some deliveries of heavy melting steel at mills at \$17.35, which is \$16.15 at the yards. Smaller users of steel scrap continue to meet the price schedule. We quote per gross ton, f.o.b. Birmingham district yards, prices to consumers as follows:

Steel rails	\$18.00 to \$19.00
No. 1 heavy steel.....	17.00 to 18.00
Cast iron borings	10.00 to 10.50
Machine-shop turnings	10.00 to 10.50
Stove plate	20.00 to 21.00
No. 1 cast.....	23.00 to 24.00
Carwheels	23.00 to 24.00
Tramcar wheels	22.50 to 23.00
Steel axles	25.00 to 26.00
No. 1 wrought.....	18.00 to 19.00

Buffalo

BUFFALO, Sept. 15.

Pig Iron.—The week has shown a continuance of steady demand and of buying both for remainder of this year and for first quarter and first half of 1920, furnaces showing a little further willingness to entertain orders for 1920 shipment, although they are not anxious to take on much tonnage for far forward delivery because the labor situation does not warrant their taking many chances for the future. There are indications of an increase in melt by many foundries, as larger shipments on contracts are being called for. One producer which is not yet selling beyond Jan. 1 reports the volume of inquiry for last quarter much in excess of its capacity to care for. Prices remain unchanged and firm at last week's quotations, which are as follows, f.o.b. furnace, Buffalo:

No. 1 foundry, 2.75 to 3.25 silicon.....	\$30.00
No. 2 X, 2.25 to 2.75 silicon.....	\$29.00 to 29.50
No. 2 plain foundry, 1.75 to 2.25 silicon	28.00 to 28.50
Gray forge	27.50 to 28.00
Malleable, silicon not over 2.25.....	29.00
Basic	27.00
Basic, 1 to 1½ per cent manganese.....	27.25
Basic, 1½ to 2½ per cent manganese.....	27.75
Bessemer	30.00
Lake Superior charcoal, regular grades, f.o.b. Buffalo	34.85

Finished Iron and Steel.—Mills have grown more conservative as to sales due to possibilities of labor difficulties. Some sales representatives have been instructed to withdraw from the market on practically all commodities except structural material and plates, and to accept only definite specifications on these products. Sheets show heavy demand and prices are very strongly held. Wire and nails are not readily obtainable, one local producer being three to four months behind on shipments. Jobbers report a heavier trade than at any time since the armistice. There is large demand for fabricated material from Canada at the present time, and it is understood that a building revival is under way. One contemplated project for which bids are soon to be taken is an extensive addition to the King Edward Hotel, Toronto, to cost \$1,500,000, and another a bank and office building in the same city to cost \$2,000,000. The Buffalo Structural Steel Co. has the contract for 100 tons of structural steel for the erection of a coke dryer building for the Union Crucible Co., Niagara Falls, N. Y., and for 100 tons structural for the Niagara Falls Power Co. for ice deflectors for use at its power plant, Niagara Falls, N. Y.

Prices f.o.b. Buffalo are as follows: Steel bars, 3.40½c.; iron bars, 4.10½c.; shapes, 3.50½c.; plates, 3.70½c.; No. 10 blue annealed sheets, 4.60½c.; No. 28 black, 5.65½c.; No. 28 galvanized sheets, 7.90½c. For "store door delivery" add 0.04½c. to each commodity.

Old Material.—The increased production on the part of steel mills is reflected in the greater demand for and consumption of scrap materials, affecting practically all grades used by such mills, and there is evidently more tendency to accumulate stocks of scrap by open-hearth furnaces and blast furnaces to provide against possibilities of delays in transportation and from labor troubles. There is a particularly strong demand for cast borings and heavy axle turnings, and while the sales in these and other lines are not of large individual tonnage, they amount to a good aggregate. Prices appear to have become more stabilized and ad-

justed to the point where they are likely to remain at the current level, and business is easier to be done, as dealers are inclined to accept present prices and make sales instead of holding for possible advances. There appears to be a prospect of an extreme shortage of cars of a character suitable for loading, as there is not sufficient equipment for normal business, and a serious situation is foreshadowed in forwarding material from yards if steps are not taken to overcome the shortage. Circulars have been sent out by the Government to shippers and railroad officials to hurry movement of cars and to load them to maximum. Prices are firm and remain unchanged from last week's schedule per gross ton, f.o.b. Buffalo, as follows:

Heavy melting steel, regular grades	\$19.00 to \$20.00
Low phosphorus, 0.04 and under	23.50 to 24.00
No. 1 railroad wrought	23.00 to 23.50
No. 1 machinery casts	24.50 to 25.50
Iron axles	28.00 to 29.00
Steel axles	28.00 to 29.00
Carwheels	22.50 to 23.50
Railroad malleable	19.00 to 20.00
Machine-shop turnings	12.00 to 12.50
Heavy axle turnings	16.00 to 17.00
Clean cast borings	13.50 to 14.00
Iron rails	24.00 to 25.00
Locomotive grate bars	20.00 to 20.50
Stove plate	22.00 to 22.50
Wrought pipe	17.50 to 18.00
No. 1 busheling	16.50 to 17.50
Bundled sheet stamping	14.50 to 15.00

New York

NEW YORK, Sept. 16.

Pig Iron.—Uncertainty as to the strike of iron and steel workers has had a depressing effect on the pig iron market, and sales have been light during the past week, being about equally divided between delivery for this year and the first half of next year. Prices for next year range all the way from this year's schedule to \$2 higher. The average advance is about \$1 for 1920 delivery. A steel company which usually is an important factor in selling foundry pig iron is now making basic and Bessemer only and has a considerable tonnage of low phosphorus on hand. The steel-making iron market is extremely dull and it is probable that prices could be shaded on anything approaching a good tonnage. It is estimated that about three-fourths of the furnaces have all the business they can take care of for the rest of the year. A few inquiries for export are pending, including one from Japan for 5000 tons of basic. There is, however, very little exporting being done on account of the exchange situation. We quote tidewater delivery for the remainder of the year as follows:

No. 1 foundry, silicon, 2.75 to 3.25	...\$30.80 to \$32.80
No. 2 X, silicon, 2.25 to 2.75	30.80 to 31.80
No. 2 plain, silicon, 1.75 to 2.25	29.80 to 30.80
No. 2 X, Virginia, silicon, 2.25 to 2.75	32.40 to 35.40

Ferroalloys.—The market for ferromanganese is very quiet and demand is limited to carload lots and quantities up to about 300 tons, mostly for early delivery. A number of the representatives of British producers are out of the market temporarily at least, but those who continue to quote are asking \$105, seaboard. The quotation of American producers is \$110, delivered. It is understood that business has been done by both British and American producers at around these levels. The demand for spiegeleisen is very light and the quotations are nominal but firm at \$35, furnace. The 50 per cent ferrosilicon market is quiet, with demand limited to small lots for early delivery, for which as high as \$100 per ton is asked.

Finished Iron and Steel.—The weakness in plates is becoming more pronounced, and several makers are meeting competition at below 2.65c., Pittsburgh, or are openly quoting prices ranging from 2.50c. to 2.60c., Pittsburgh. A locomotive company placed about 500 tons of boiler steel and a few hundred tons of tank steel on the basis of 2.50c., Pittsburgh. Other lots have been sold to Eastern consumers at 2.55c. and 2.60c. Aside from plates, prices are strong. On bars and sheets it would not be difficult to obtain a premium if makers so desired. Some sales of soft steel bars have been made at 2.50c., Pittsburgh. Locomotive builders are figuring on an inquiry from Belgium for 400 loco-

motives. It is believed the business will be placed with the American Locomotive Co. and the Baldwin Locomotive Works, though credit arrangements have not been completed. A credit of five years is asked. These locomotives would require about 12,000 tons of plates. Car builders report no orders of importance for new cars, but the railroads are placing orders for repair sections and parts. Car shops are becoming busier on repair work, and their purchases of plates, while not large in the aggregate, are giving the plate mills a better volume of business. Eastern plate mills are operating at about 50 per cent of capacity. There is a lull in structural lettings, but greater activity is looked for during the fall in preparation for spring construction. Lettings during the past week include the following:

Manufacturing plant for Smith Brothers, cough drop manufacturers, Michigan City, Ind., 400 tons, to American Bridge Co.

Factory addition for Gillespie Motors Corporation (formerly American Shell Co.), Paterson, N. J., 300 tons, to American Bridge Co.

Two bridges in Massachusetts and New Hampshire for the Boston & Maine Railroad, 350 tons, to American Bridge Co.

Dirigible hangar for the Navy Department, at Lakehurst, N. J., 8000 tons, to Bethlehem Steel Bridge Corporation.

A highway bridge at Lockhart, S. C., 270 tons, to a bidder whose name is unannounced.

Inquiries are in the market for the following:

Two apartment houses in New York, totalling 1000 tons; J. E. R. Carpenter, 681 Fifth Avenue, architect.

Crane runway for the Worthington Pump & Machinery Corporation, Buffalo, N. Y., 250 tons.

A soldiers' and sailors' memorial bridge at Harrisburg, Pa., 350 tons.

A Y. M. C. A. building at Bayonne, N. J., which has been in the market, will not be built of steel. The demand for bars, sheets, tin plate and bar iron continues very satisfactory, and in some instances more business is being offered than the mills care to take for this year. Inquiries for next year are not yet receiving consideration.

We quote as follows for mill shipments: Bar iron, refined grade, 2.77c.; double refined bar iron, 3.77c.; soft steel bars, 2.62c.; shapes, 2.72c.; plates, 2.77c.; all New York.

Old Material.—An eastern Pennsylvania steel plant has been buying some scrap, but has been rejecting cars freely, demanding high and uniform quality. Dealers are confident that consumers need scrap and are only holding off because of the threatened steel strike. One prominent broker has reduced his schedule of buying prices on certain specialties and some standard items from 25c. to \$1.50, refusing to pay more than this schedule. Heavy melting steel still remains inactive, chief transactions involving cast scrap, borings and turnings and stove plate. Prices are practically the same as last week. We quote dealers' buying prices, New York, per gross ton as follows:

Steel rails, 3 ft. or under (or equivalent)	\$15.50 to \$16.00
Heavy melting steel	14.50 to 15.00
Rerolling rails	22.00 to 23.00
Relaying rails, nominal	41.00 to 42.00
Steel car axles	25.00 to 26.00
Iron car axles	32.00 to 33.00
No. 1 railroad wrought	23.50 to 24.00
Wrought iron track	18.00 to 19.00
Forge fire	10.50 to 11.00
No. 1 yard wrought, long	18.50 to 19.00
Light iron	6.00 to 7.00
Cast borings (clean)	11.50 to 12.00
Machine shop turnings	11.00 to 11.50
Mixed borings and turnings	10.00 to 10.50
Iron and steel pipe (1 in. min. diam., not under 2 ft. long)	16.00 to 16.50
Stove plate	17.50 to 18.00
Locomotive grate bars	18.00 to 18.50
Malleable cast (railroad)	16.00 to 16.50
Old carwheels	21.50 to 22.00

Prices which dealers in New York and Brooklyn are quoting to local foundries, per gross ton:

No. 1 machinery, cast	\$24.50 to \$25.00
No. 1 heavy cast (columns, building materials, etc.), cupola size	23.50 to 24.00
No. 1 heavy cast, not cupola size	16.00 to 16.50
No. 2 cast (radiators, cast boilers etc.)	17.50 to 18.00

Cast-Iron Pipe.—Though there is an absence of municipal lettings, business is fair, with many sales in

carload and smaller separate buyers lots. One manufacturer has stated that he will soon raise his prices on small sizes, there being a scarcity. Prices are being maintained generally. Considerable pipe is being exported. We quote 6-in. and heavier, \$54.30; 4-in., \$57.30, with \$2 additional for class A and gas pipe.

Boston

BOSTON, Sept. 15.

Pig Iron.—More furnaces are following the leaders who have started taking 1920 business on a large scale, and those who are still out of the market for next year promise to be quoting soon. More than half the iron now sold is for first quarter delivery at prices averaging \$1 higher than for the remainder of this year. Most orders for 1920 call for first quarter delivery. Sellers are finding it increasingly difficult to get the iron from their furnaces to satisfy customers. An agent of Southern iron in New England who recently appeared before the Railroad Administration expects soon the re-establishment of a rail and water rate at about \$6.50; whereas the present rail rate is \$8. The same agent states that costs of making pig iron are decreasing due to the establishment of labor saving devices by his furnaces and the bringing into blast of more furnaces. These factors should increase the sales of iron from the Southern district, which have been very light for a long time. Two eastern Pennsylvania furnaces selling in New England are contemplating changing to malleable iron, foreseeing an improved demand for this grade. Early this week, a Boston consumer placed an order for over 1000 tons of foundry iron for first quarter. An important textile interest is in the market for a round block of iron for next year. As an indication of business in Vermont, one firm sold there last week 950 tons of foundry iron to six buyers, the largest lot being of 300 tons. Foundries are more interested in stocking up with coke to be guarded against winter transportation difficulties. We quote, delivered Boston, for this year:

Eastern Pa., No. 2 X (silicon 2.25 to 2.75)	\$32.90
Eastern Pa., No. 2 plain (silicon 1.75 to 2.25)	31.90
Buffalo No. 2 X (silicon 2.25 to 2.75)	32.90
Buffalo No. 2 plain (silicon 1.75 to 2.25)	31.90
Virginia No. 2 X (silicon 2.25 to 2.75)	35.70
Virginia No. 2 plain	34.70

Finished Material.—Business in two lines of products in particular is inactive—forged products and structural material. Mill representatives are unanimous in declaring heaviest activity to be in bars, one large independent having raised recently to 2.50c. on this item. Among other active commodities are wire products, nails, pipe and sheets, all of which are difficult to supply. That the jobbers are unusually busy is indicated by the many who are seeking larger quarters for their business. Transactions involving structural steel are the following: Award to the Berlin Construction Co., Berlin, Conn., of an extension to the automatic building of the Saco Lowell Mills at Newton Upper Falls, Mass., 100 tons of steel to be used; to the same company a power house for the Seamless Rubber Co., New Haven, Conn., 100 tons of steel. Fred T. Lye, Springfield, Mass., will build a garage on Commonwealth Avenue in Boston for the Noyes Buick Co., taking 90 tons. Another new enterprise being figured upon for the second time is that of a new factory building for the Nelson Blower & Furnace Co., South Boston, the first plans having called for 1800 tons of steel.

Old Material.—The threatened steel workers' strike on Sept. 22 has retarded buying of scrap, for though the consumers claim they do not take the threat seriously, they are nevertheless preparing for it, one of the preparations apparently being the abstention from piling up in their yards a reserve scrap pile. Meanwhile prices remain where they are, though dealers believe that when buying by consumers does start again, it will be at a slightly lower level. Fair tonnages are being shipped to local consumers of cast scrap and stove plate. A manufacturer of horseshoes recently bought some wrought scrap for \$21.50, delivered. Borings and turnings continue active. High prices were bid last week

for the scrap from the Charlestown Navy Yard, consisting of plate, pipe, forge flashings and turnings and amounting to about 600 tons. Prices which dealers are paying per gross ton, delivered to their New England yards, follow:

No. 1 heavy melting steel	\$15.00 to \$16.00
No. 1 railroad wrought	19.50 to 20.00
No. 1 yard wrought	28.00 to 19.00
Wrought pipe (1 in. in diameter, over 2 ft. long)	15.50 to 16.00
Machine shop turnings	10.50 to 11.00
Cast iron borings	11.00 to 11.50 *
Heavy axle turnings	11.50 to 12.00
Blast furnace borings and turnings	9.50 to 10.00
Forge scrap	10.50 to 11.00
Bundled skeleton	10.50 to 11.00
Steel car axles	22.00 to 23.00
Carwheels	24.50 to 25.00
Machinery cast	24.50 to 25.50
No. 2 cast	22.00 to 23.00
Stove plate	19.50 to 20.00
Railroad malleable	17.00 to 17.50
Rerolling rails	20.00 to 20.50

Cincinnati

CINCINNATI, Sept. 15.

Pig Iron.—Circulated reports that the strike at the Silvery furnaces in Jackson County, Ohio, had been settled are erroneous. However, it is rumored that a settlement of the difficulties seems to be nearer solution. Milton furnace, in that district, that has been shut down for repairs, expects to blow in again Oct. 1. A few sales of silvery iron have been made for forward shipment, but no fixed quotations have been made on which to base a market price. Foundry iron is very quiet. Very few sales and inquiries are reported and Southern producers are still unwilling to take on any business for next year's shipment. Southern Ohio producers have also withdrawn a tentative quotation of \$28.75 Ironton, at which price a few sales were made a short time ago. Later information in hand is to the effect that at least one Lake interest is still accepting some business from favored customers at \$26.75 for shipment this year, or during the first quarter of next. None has been disposed of in this vicinity. Virginia furnaces are practically out of the market and are quoting \$30 furnace for 1.75 to 2.25 silicon. Disquieting labor conditions are said to be the cause for the present very dull period. While most of the Southern furnaces are holding firm at \$28, Birmingham basis for last quarter shipment, it is known that acceptable business could be placed 25c. below that figure. Basic shows no life and no inquiries are out from melters in this territory.

Based on freight rates of \$3.60 from Birmingham and \$1.80 from Ironton, we quote f.o.b. Cincinnati:

Southern coke, silicon, 1.75 to 2.25 (base price)	\$31.35
Southern coke, silicon, 2.25 to 2.75 (No. 2 soft)	33.35
Ohio silvery, 8 per cent silicon	42.05
Southern Ohio coke, silicon, 1.75 to 2.25 (No. 2)	28.80
Basic Northern	26.55
Standard Southern carwheel	51.60
Malleable	29.05
Lake Superior charcoal	35.35

Coke.—The supply of both furnace and foundry coke in all districts is running low. It is almost impossible to get fuel from either the New River or Pocahontas districts. Oven operators are using every endeavor to make shipments on contracts promptly, but are handicapped by the low rate of production and the short car supply. It is difficult to get box cars and a great deal of fuel is now going forward in open cars. Prices in all districts are firmer, and one Connellsville operator last week quoted \$5.50 per net ton at ovens on a round lot of 48-hr. coke for last quarter shipment. The average quotation for furnace coke in that district ranges from \$5 to \$5.25 and foundry grades are firm at \$6.50, although a few producers are taking on a little new business as low as \$6. Wise County foundry coke ranges from \$8 to \$8.50, and New River foundry is quoted at \$9 to \$10 at oven.

Finished Material.—An advance of approximately 10 per cent has been made on machine bolts, machine screws and kindred products, although all of the jobbers have not yet marked up their prices. Business in machine shop supplies is rather slow, as purchases

are being made only to fill immediate requirements. Wire nails are firm at \$4 per keg base and local warehouse stocks are running low, as shipments from the mills are moving slowly. There is a continued demand for concrete reinforcing bars and also for small structural shapes. The supply of sheets is running short and mill shipments are unsatisfactory.

The following are present local jobbers' prices: Steel and iron bars, 3.33c. base; bands, 4.03c. base; structural shapes, 3.43c. base; plates, $\frac{1}{4}$ -in. and heavier, 3.36c. base; No. 10 blide annealed sheets, 4.53c.; wire nails, \$4.00 per keg, base; machine bolts, smaller sizes, 40 and 5 per cent off list; larger sizes, 30 and 5 per cent. Semi-finished nuts, 9/16-in. and smaller, 70 and 5 per cent off list; structural steel rivets, 4.85c. lb. base; wood screws, 80 per cent off, and coach screws, 45 and 5 per cent off list. Cold-rolled shafting, 5c. per lb. base.

High Speed Steel.—No change has been made in standard brands of high speed steel. It is sold at \$1.50 per lb. base. Some steel is offered as low as \$1.35 per lb. Business is slowing down.

Old Material.—Shipments to the mills are slowing down and in some instances requests to hold back material have been received from the mills. The reason for this is the uncertain labor condition in the Pittsburgh district, although the consumption of scrap there has not been reduced. The car shortage situation is growing worse. Dealers are slow in buying any large tonnages, as they are uncertain as to what future values will be. All quotations given are nominal. The following are dealers' buying prices f.o.b. at yards, in carload lots, Southern Ohio and Cincinnati:

<i>Per Gross Ton</i>	
Bundled sheet	\$12.00 to \$12.50
Old iron rails	22.50 to 23.00
Relaying rails, 56 lb. and up	40.00 to 41.00
Rerolling steel rails	20.50 to 21.00
Heavy melting steel	16.50 to 17.00
Steel rails for melting	16.50 to 17.00
Old carwheels	18.00 to 18.50
No. 1 railroad wrought	17.50 to 18.00

<i>Per Net Ton</i>	
Cast borings	\$8.00 to \$8.50
Steel turnings	7.00 to 7.25
Railroad cast	20.00 to 20.50
No. 1 machinery	22.00 to 22.50
Burnt scrap	13.00 to 14.00
Iron axles	24.00 to 24.50
Locomotive tires (smooth inside)	18.00 to 18.50
Pipes and flues	13.50 to 14.00
Malleable cast	15.50 to 16.00
Railroad tank and sheet	12.00 to 12.50

St. Louis

ST. LOUIS, Sept. 15.

Pig Iron.—Buying by foundries continues to the extent that furnaces were willing to take contracts. No business is being done beyond Jan. 1 save old customers, and largely on the basis of costs to be in effect at that time. In some instances orders have been reported as taken at an advance of \$2 per ton over the present market, with protection in case of a drop in costs of production. All business has been done in small lots. None of the basic consumers has entered the market. Prices generally are firmer.

Coke.—Prices on coke have firmed up in accordance with the conditions at the ovens and because, in the case of the local by-product plant, of a sold up condition. The contracts existing with foundries expire for the most part with the end of the year, and there is no disposition to make definite engagements for 1920. All brands are quoted about \$1 per ton higher, with New River coke commanding \$10 per ton.

Finished Iron and Steel.—The buying of finished products continues to increase in aggregate volume, but no large individual contracts are being reported. Each month is showing an increase over the preceding similar period and the construction work in this district is increasing with new permits coming out daily for larger and larger enterprises. The largest during the past week was for an aggregate of about \$2,000,000 for structures for the United Drug Co., which will equip a large plant here. Movement out of warehouse is steadily growing, but is now being affected by deferred

deliveries of material which is not coming in in the same volume as the new business. For stock out of warehouse we quote as follows:

Soft steel bars, 3.44c.; iron bars, 3.44c.; structural material, 3.54c.; tank plates, 3.74c.; No. 8 sheets, 4.59c.; No. 28 annealed sheets, 4.64c.; No. 28 black sheets, 5.69c.; No. 28 galvanized sheets, black sheet gage, 7.04c.

Old Material.—The market is depressed and lower. There is very little trading, dealers buying railroad lists at low figures. About 7500 tons were sold by five roads in the past week. The Government will sell 8000 tons of shell steel next week at the Curtis and Wagner plants. We quote dealers' prices f.o.b. customers' works, St. Louis industrial district as follows:

<i>Per Gross Ton</i>	
Old iron rails	\$22.50 to \$23.00
Old steel rails, rerolling	26.50 to 27.00
Old steel rails, less than 3 ft.	21.50 to 22.00
Relaying rails, standard sections, subject to inspection	38.00 to 45.00
Old carwheels	24.00 to 24.50
No. 1 railroad heavy melting steel	18.50 to 19.00
Heavy shoveling steel	16.50 to 17.00
Ordinary shoveling steel	15.50 to 16.00
Frogs, switches and guards, cut apart	18.50 to 19.00
Ordinary bundled sheets	12.00 to 12.50
Heavy axle and tire turnings	13.75 to 14.25

<i>Per Net Ton</i>	
Iron angle bars	\$19.00 to \$19.50
Steel angle bars	16.50 to 17.00
Iron car axles	30.50 to 31.00
Steel car axles	28.50 to 29.00
Wrought arch bars and transoms	22.50 to 23.00
No. 1 railroad wrought	18.00 to 18.50
No. 2 railroad wrought	17.00 to 17.50
Railroad springs	17.00 to 17.50
Steel couplers and knuckles	17.00 to 17.50
Locomotive tires, 42 in. and over, smooth inside	17.25 to 17.75
No. 1 dealers' forge	16.00 to 16.50
Cast iron borings	11.00 to 11.50
No. 1 busheling	16.50 to 17.10
No. 1 boiler, cut to sheets and rings	12.50 to 13.00
No. 1 railroad cast	24.50 to 25.00
Stove plate and light cast	21.50 to 22.50
Railroad malleable	16.50 to 17.00
Agricultural malleable	16.10 to 16.50
Pipes and flues	14.50 to 15.00
Heavy railroad sheet and tank	13.50 to 14.00
Railroad grate bars	18.50 to 19.00
Machine shop turnings	8.50 to 9.50
Country mixed	14.00 to 14.50
Uncut railroad mixed	15.50 to 16.00
Horseshoes	20.00 to 20.50

Cleveland

CLEVELAND, Sept. 16.

Iron Ore.—Ore firms are crowding shipments as much as possible to make up for the time lost in August by the dockmen's strike. Although some boats are tied up with the coal strike, ore shipments are again about normal, and are expected to be quite heavy until near the close of navigation. It is believed that the season's movement will be 54,000,000 to 55,000,000 tons, or at least 6,000,000 tons less than a year ago, when the movement was 61,000,000 tons. Shipments to Sept. 1 were 10,000,000 tons less than a year ago. Ore men believe that, with the smaller shipments this year, the amount of ore on docks will be less next May than for the last two or three years, and that ore buying for next season will start out at a much livelier rate than it did this year. There is practically no activity in the market, although two sales, each of a 10,000-ton lot, were made the past week. Ore prices, delivered f.o.b. lower Lake ports, are as follows:

Old range Bessemer, \$6.45; old range non-Bessemer, \$5.70; Mesaba Bessemer, \$6.20; Mesaba non-Bessemer, \$5.55.

Pig Iron.—An increase is observed in the volume of inquiry for foundry iron for the first half, but furnaces are still declining to take on tonnage for that delivery, with the exception of one interest that has booked a limited amount. Some consumers seem to be very anxious to get under cover for iron for next year's delivery. Consumers are fairly well supplied for the remainder of the year, and the market is rather quiet. However, quite a few sales of foundry iron are reported in lots of 100 to 200 tons for the last quarter to

consumers who have found that they will need more than they had contracted for. One producer reports sales for the week aggregating 8000 tons, nearly all of which was for the first half of next year; included in this was 4000 tons of malleable iron which was placed by a gray-iron foundry for making semi-steel castings for automobile parts. Another interest reports sales aggregating 4000 tons. While the ruling local price for iron running 1.75 to 2.25 in silicon is \$27.50 at furnace, one interest reports sales of this grade outside of this immediate territory at \$27.50 to \$28 and the sale of 500 tons of iron running 2.75 to 3 per cent silicon at \$30.25. No inquiry is coming out for steel-making iron, but there is some inquiry for Ohio silvery. Local sellers have received no confirmation of the report that the Jackson County strike has been settled. We quote, delivered Cleveland, as follows:

Bessemer	\$29.35
Basic	25.65
Northern No. 2 foundry, silicon, 1.75 to 2.25 ..	27.65
Southern foundry, silicon, 2.25 to 2.75 ..	34.10
Gray forge	26.15
Ohio silvery, silicon, 8 per cent	45.40
Standard low phos., Valley furnace ..	\$38.00 to 40.00

Coke.—The foundry coke market is firm but not so active as it was a few weeks ago. However, a few small lot sales are reported for early shipment. Standard Connellsville foundry coke is quoted at \$6.50 per net ton at oven for prompt shipment and contract.

Finished Iron and Steel.—The demand for sheets, particularly blue annealed, is heavy, and many consumers are finding it difficult to supply their early requirements. As a result of the shortage, material on stock piles is being picked up very quickly. One maker of black sheets reports its entire output for the year sold at 4.50c., or \$3 a ton above regular prices. However, the disposition of most mills is not to ask an advance. Considerable inquiry is being made for black sheets for export. Many consumers are inquiring for fourth quarter contracts, and one large Ohio mill has made reservations of about its entire output for that delivery, subject to prices prevailing at that time. In structural lines the American Bridge Co. has taken 18,000 tons for the Citizens Savings-Union National Bank Building, Cleveland, and among new building projects is a large extension to the building of the Cleveland Trust Co., which will require 4000 to 5000 tons. The demand for hard steel bars for reinforcing work continues heavy, and mills are so far behind in shipments that round lots are being purchased from warehouse stocks at the regular warehouse price of 3.27c. Inquiries include one for 500 tons for a Cleveland factory building. Specifications for bar products are very heavy from the automobile field and other consumers, and considerable inquiry is coming out for fourth-quarter contracts which mills are unable to enter on their books. The demand for light plates is active. Reeves Bros., Alliance, Ohio, have taken a contract for stills for the new Standard Oil refinery in Toledo requiring 3000 tons of plates, which have been placed. Lake shipyards are figuring on boats that if placed will require approximately 40,000 tons of plates, but none of the boat inquiries have as yet reached the contract stage. The Lackawanna Steel Co. has taken 400 tons of steel piling for a Government dam in the Ohio River. There is a limited amount of activity in the bar iron market, which is quoted at 2.50c., Pittsburgh, as a minimum price. Warehouse prices are as follows:

Steel bars, 3.27c.; plates, 3.57c.; structural shapes, 3.37c.; bands and hoops, 3.97c.; No. 10 blue annealed sheets, 4.47c.; No. 28 black sheets, 5.27c.; No. 28 galvanized sheets, 6.62c.

Bolts, Nuts and Rivets.—Bolt and nut specifications are in good volume, but not a great deal of new business is being placed. There is some inquiry from consumers and jobbers for fourth-quarter contracts, but makers are declining to book orders for that delivery because of the labor situation in the steel plants. Some good export business in bolts and nuts is being placed, one order being for 800 tons for shipment to the Far East. Rivet specifications are heavy, and considerable export inquiry is developing, mostly from the Pacific Coast.

Old Material.—The Cleveland District Ordnance De-

partment Salvage Board on Monday sold nearly 14,000 tons of heavy melting steel scrap. One lot of 5565 tons of 155-mm. shell forgings at the plant of the American Brake Shoe & Foundry Co., Erie, Pa., was divided between the Joseph Joseph & Brothers Co. and the McKinney Steel Co., the former paying \$20.57 and the latter \$20.50, making the scrap \$22 delivered at the McKinney plant in Cleveland. Another lot, consisting of 8150 tons of 6-in. shell forgings at the Findlay, Ohio, plant of the Grant Motor Corporation, went to the McKinney Steel Co. at \$19.90 or the same delivered price. The market generally is quiet, with a tendency toward further weakness. Little scrap is being sold to the mills, and trading between dealers has reached a low ebb. Sales of heavy melting steel have been made to dealers at \$19, and some of this material on track has been sold to mills at the same price. There has been a little activity the past few days in cast borings, owing to the demand from dealers for material to cover old contracts for shipment to Warren and Canton, and \$15 is being paid for this grade delivered. Short turnings for blast furnaces and shop turnings are inactive, and the price on the former grade has declined. We quote, delivered consumers' yards in Cleveland and vicinity, as follows:

Heavy melting steel	\$19.00 to \$19.75
Steel rails, under 3 ft	22.00 to 22.50
Steel rails, rerolling	25.50 to 26.50
Iron rails	26.00 to 27.00
Iron car axles	35.00 to 36.00
Steel car axles	33.00 to 34.00
Low phosphorus melting scrap	21.75 to 22.00
Cast borings	14.25 to 14.75
Iron and steel turnings and drillings	10.50 to 11.00
Short turnings (for blast furnaces)	13.50 to 14.00
Compressed steel	17.00 to 17.50
No. 1 railroad wrought	23.00 to 23.50
Cast iron carwheels	22.00 to 22.50
Agricultural malleable	17.50 to 18.00
Railroad malleable	20.75 to 21.25
Steel axle turnings	16.25 to 16.75
Light bundled sheet scrap	15.00 to 15.50
No. 1 cast	23.00 to 24.00
No. 1 busheling	18.00 to 18.50
Drop forge flashings, 10 in. and under	17.00 to 17.50
Drop forge flashings, over 10 in.	14.25 to 14.50
Railroad grate bars	19.00 to 20.00
Stove plate	19.50 to 20.50

San Francisco

SAN FRANCISCO, Sept. 8.

A more or less stagnant condition has recently prevailed in the metal market. This has been due to a great degree to local holidays, and in the later part of August to the strike of railroad yardmen that tied up all shipping for two days and for a brief time threatened to develop a serious condition. Besides Labor Day, when all business was closed, the next day was a half holiday in this city to witness a parade of the sailors from the Pacific fleet which arrived in San Francisco Harbor the previous day. Sept. 9, California's "Admission Day," was another holiday, and thus, with a Saturday half holiday, there were only six full working days in the first nine of the month.

The foundries are finding that the demand for their product is steadily decreasing, and it is stated that there is no immediate reason for an improvement to be expected unless business shows a sudden revival. On the other hand, the jobbers do not note any change in their business. They say there is a fair demand for nearly all material, with a very lively demand for wire goods on account of the large number of private dwellings that are being built all over the Coast. Deliveries on this class of products are said to be becoming slower. There is also a good jobbing demand for nearly all descriptions of pipe; while assortments have been kept up fairly well, the jobbers are having trouble in getting shipments on increases of stock.

Bars.—An exceptionally good demand is noted, especially for reinforcing bars. Some dealers state that the present demand is beyond anything this market has previously experienced. Prices are maintained, and nothing is being heard of reports of cutting of prices, such as were current a few weeks ago.

Structural Steel.—New business is still below nor-

mal. About the only large building certain of immediate erection in San Francisco this fall is the new million-and-a-quarter State building at the Civic Center. Bids for material for this building will be opened the latter part of September.

Sheets and Plates.—The movement in the interior of the State in galvanized sheets is still good, and the probability that it will continue seems excellent. Plates, however, are quiet and no real activity is expected in these until the shipyards secure more orders for ships.

Wrought-Steel Pipe.—There is an excellent trade in all diameters of pipe, and except on the large sizes, 8 and 10 inches in diameter, very fair deliveries are being made. On these large sizes, it is reported that deliveries comparable to war conditions prevail, and not less than 8 or 10 months' delivery will be guaranteed. Jobbers are finding an excellent call for sizes up to 3 in., being those sizes which go into private homes. The San Joaquin Valley is building more houses than any other section, and at Fresno it is reported that over 500 houses costing from \$5000 up are being built or have been contracted for. The total of the pipe going into the new homes in this one city makes a considerable amount.

Cast-Iron Pipe.—The demand for cast pipe seems to have been radically affected by the various holidays, and it is said that no call for bids for a job of any size has been made since the first of the month. However, the market is considered in a good condition, for the resumption of building on a large scale means a future demand for cast pipe for water and gas connections.

Pig Iron.—Dealers in pig iron are daily becoming more optimistic regarding the demand as the scarcity of scrap, both present and future, becomes more apparent. It is predicted that the Coast will have to become a much greater user of cast scrap in the near future or a good many plants will be forced to close. One foundry on the east side of the bay is reported to be using pig iron almost exclusively, and the experiment is being watched by others. At present most of the foundries have a fair supply of cast scrap on hand, and with the restricted demand for their finished product few of them are as yet in the market for much pig. However, with the growing scarcity of all scrap, especially cast, the price of the latter is likely to advance to a figure which will make pig iron more economical for foundry use.

Coke.—There is no change in coke, which is plentiful for all immediate demands and the users are not inclined to buy for the future until general business settles down to a condition which permits a more accurate forecast of the future.

Old Material.—Cast scrap has almost disappeared from this market, and the future of this class of old material appears rather dark. It is said there are no stocks of any quantity either in any yard in the State or located at any points of origin. Steel scrap is also dwindling as the shipyards progress in the completion of the vessels which they have under construction. It is announced that the 4480 tons which the Southern Pacific advertised for sale has been awarded to the Columbia Steel Co., San Francisco. The price paid is withheld.

Washing Machine Companies Consolidated

A new company, known as the Mallory Industries, Inc., Port Chester, N. Y., has purchased the plants of Abendroth Brothers and the Liberty Electric Co., that city, and the business of the Crystal Washing Machine Co., Detroit, and has consolidated all three concerns under the new name. Philip R. Mallory is president of the new company and F. K. Leatherbee is treasurer. The company will manufacture washing machines.

At Niles, Ohio, work is being pushed on the eight-mill sheet plant of the Falcon Steel Co., in order that initial production may be turned out early in 1920.

Export Trade

Because of the difficulty of closing European business on account of the exchange situation most of the steel export companies are giving prior attention to inquiries from Japan and South America. From these quarters the greater part of present bookings are coming.

Quotations are out on about 40,000 tons of ship plates for Japan, and all or part of this business may soon be closed. Japan is the most important buyer in the export market, though good orders are being received from South American countries, as for example an order for 6000 tons of 35 lb. rails from Brazil and numerous small orders for wire from the Argentine. Exporters are finding it difficult, however, to get mills to accept any more wire business.

Japan also appears as a buyer of pig iron. One export company which booked 500 tons for that country about two weeks ago has received another order for 2000 tons, and an inquiry for 5000 tons is pending. On an inquiry for 10,000 tons of pig iron for Belgium the business was lost on account of inability to obtain a sufficiently low freight rate. Since then an offer of vessel space at \$10 a ton has been received and on this basis one export company is hopeful of closing another pig iron inquiry from Belgium, which is pending.

The American Locomotive Co. is figuring on 400 locomotives for Belgium, on which a five-year credit is asked. It is probable that the business will be placed here, but it may be divided between two locomotive builders. About 12,000 tons of plates would be required. There are a few inquiries for cars for export, notably from South America. Cuba has recently bought small lots of sugar-cane cars.

An Eastern steel export company reports that it has recently received several orders from England.

Foreign Credit Clearing House

The organization of a foreign credits clearing house has about been consummated. It will amount to an institution from which manufacturers can obtain quickly credit information concerning a would-be foreign buyer. At the outset the information will necessarily be made up largely from the records of banking institutions and industrial establishments already with more or less experience in export trade. Ultimately it is proposed to have foreign representatives, but meanwhile a buyer will not need to refer by name to a manufacturer's competitor. Instead the information may be obtained by the credits organization. As it is proposed to give a manufacturer or an exporter definite information that a given order should or should not be accepted, the decisions of the clearing house will have a very direct bearing on the financing of the credits. It is believed that in some cases securities to cover a given transaction having the approval of this credit establishment would be negotiable even without the assistance of any foreign trade financial corporation established under the Edge or similar bills now before Congress.

The development is one which has been conceived and very largely pushed by Mark O. Prentiss, resident vice-president and director of public relations of the National Surety Co., New York. As a matter of fact it is planned to have five separate credit organizations calculated to cover all possible international commercial relations. Mr. Prentiss said that by the end of the week the personnel of the board of directors would probably be completed. The credit estimate or decision concerning a given buyer will be supplied probably for one per cent of the amount involved in a given transaction. Plans also include an insurance of the collectibility of accounts and for this, other institutions like the National Surety Co. have been invited to participate. Some mention has been made of this development in the daily press and in that connection Secretary of Commerce William C. Redfield has been mentioned as likely to be the president, but apparently this is premature, as the selection of officers will doubtless rest with the board of directors now being formed.

British Iron and Steel Market

Foundry Strike Threatened—Heavy Demand for Tin Plate, Black and Galvanized Sheets

(By Cable)

LONDON, ENGLAND, Sept. 16.

An extensive foundry strike is now threatened, but otherwise foundry conditions are slightly improved. The coal output is increasing, having been 4,355,000 tons for the week ended Aug. 30, as compared with 3,989,000 tons for the week ended Aug. 23.

There is an active demand for tin plates, which are selling at about 36s. 6d. for this year's delivery, and 36s. 3d. for the first half with South America, Rumania and Germany asking for supplies. The output, however, is affected by tropical heat and drought at Llanelli, Wales.

The demand for black plates is heavy, with circles, 28 gage, quoted at £39 to £40 and rectangles at £29 10s. to £30. Demand for black and galvanized sheets is heavy, but makers are still out of the market, being fully booked for months. Corrugated sheets are quoted at £30 10s. upward, with black sheets, 24 gage, at about £24 15s.

In Luxemburg only about one-third of the furnaces are working because of lack of fuel and transportation difficulties. Lorraine is offering rolled products at about 510 fr. f.o.b. Antwerp (about 2.55c. per lb. at to-day's rate of exchange).

We quote per gross ton, except where otherwise stated, f.o.b. makers' works, with American equivalents figured at \$4.14 for £1, with the reservation that most makers have temporarily withdrawn prices:

Pig Iron:	f	s.	d.	f	s.	d.	
East coast hematite	.10	0	0	.....	\$41.40	.....
West coast hematite	.10	4	6	.....	42.33	.....
Scottish foundry, No. 1.	.10	0	0	to 10	10	0	41.40 to \$43.47
Coke, furnace	2	8	0	to 2	10	0	9.93 to 10.35
Coke, foundry	2	13	0	to 3	6	0	10.97 to 13.66
Billets	15	0	0	.....	62.10	.....
Tin plate and sheet bars	14	0	0	.....	57.96	.....
Rails, 60 lb. and upward	16	10	0	.....	68.31	.....
					Cents per lb.		
Bars, 3/4 to 3 in.	20	5	0	.....	3.74	.....
Beams	17	10	0	.....	3.23	.....
Plates, ship, bridge and tank	18	5	0	.....	3.37	.....
Plates, boiler	22	10	0	.....	4.16	.....
Bar iron, stand, crown	22	0	0	to 23	5	0	4.06 to 4.34
Galvanized sheets	30	10	0	.....	5.63	.....
Black sheets, 24-gage	24	15	0	.....	4.57	.....
Tin plates, 14 x 20, coke	1	16	6	.....	\$7.55	.....
112 sheets, 108 lb., f.o.b. Wales.							

American and British Prices Nearer Together—Foreign Ore Trade Lifeless—Pig Iron and Steel Output Small

LONDON, ENGLAND, Aug. 29.—The foreign ore trade has been lifeless recently, makers being well stocked and showing a disposition to adopt a conservative attitude in view of the uncertain outlook. Bilbao-Middlesbrough freight has been steady at 25s., on which basis the current quotations of best Bilbao rubio, 50 per cent quality, would be about 53s. 6d. per ton ex-ship Tees.

The market for Cleveland pig iron has recently been settling down to business after the lull of the holiday period. Business is showing signs of more activity. Unfortunately, the output is not sufficient to meet the demand and shows no sign of expansion. Practically no prompt iron is available, makers being sold out for September and heavily committed even for October. There is plenty of forge iron obtainable, but consumers are not disposed to take a proportion of forge iron for mixing purposes. For export there has been a more active inquiry, chiefly for the Dominions and India. From Scandinavia the demand is moderate. Trade with Italy is more or less suspended, owing to exchange rates. The demand for hematite has been easier and the export position is quiet.

As to the general steel position, business is not active, due mainly to the fact that in the particular

lines which are wanted delivery is very difficult. Not much business has been done here recently for American account, although there appear to be fair quantities of billets arriving. In overseas markets British and American prices seem to be rather nearer together now than they were. The chief difficulty at home is the inadequacy of output and, as the works are operating on shorter hours, the difficulty of securing sufficient skilled labor is acute.

Another large industrial combination is announced. Cammell Laird & Co., Ltd., has called a shareholders' meeting to sanction an agreement entered into with the Midland Railway Carriage & Wagon Co., Ltd., of Birmingham. The capital of the Midland Wagon Co. is £400,000, and its business is closely allied to the interests of Cammell Laird & Co., and it is proposed to construct steel railroad cars at Nottingham. This follows a similar amalgamation between Vickers and the Metropolitan Carriage Wagon & Finance Co. Some details are available concerning the Tube Investments, Ltd., which has been formed to combine by an exchange of shares the interests of Accles & Pollock, Ltd., Credenda Conduits Co., Simplex Conduits & Tubes, Ltd. Babcock & Wilcox, Ltd., has undertaken to acquire 100,000 shares. The authorized capital of the new company will amount to £1,250,000.

The first report of the United Steel Companies, covering the period from incorporation on March 25, 1918, to June 30, 1919, came out recently. This large combination embraces many important firms, and has a share capital of £8,930,000. Most of the acquired units were private undertakings, but one or two well-known public enterprises were included. The revenue has consisted mainly of income on the holdings in acquired undertakings. The dividend on the ordinary shares is 10 per cent per year for 18 months.

British Iron and Steel Exports in August

British exports of iron and steel in July, excluding iron ore and including scrap, were 191,724 gross tons or slightly less than in May and June when they were 208,179 tons and 195,582 tons respectively. This compares with an average of 169,563 tons per month for the first half of this year. The monthly averages in 1915, 1916, 1917, and 1918 were 220,670 tons, 279,695 tons, 195,400 tons and 134,826 tons respectively.

The July exports of pig iron, including ferroalloys, were 23,360 tons as compared with 27,816 tons in June and 25,749 tons as an average for each month of the first half of this year. Ferroalloy shipments, largely ferromanganese, were 5865 tons in July against a monthly average for the first half of 6266 tons.

Shipments to foreign countries of steel bars in July were 22,634 tons against 25,882 tons in June and 20,913 tons per month to Aug. 1, 1919. Tin-plate exports are increasing, having been 34,431 tons in July against 21,468 tons in June and 19,277 tons per month for the first half. The exports of steel plates not under 1/8 in. thick were 15,621 tons last July; in June they were 24,479 tons with the monthly average for the first half at 23,512 tons per month.

British imports of iron and steel were 47,912 tons in July, excluding iron ore and including scrap. They have been growing gradually since April when they were only 14,367 tons. In June they were 40,724 tons with the monthly average for the first half at 37,315 tons per month. These figures compare with the monthly averages in 1915, 1916, 1917 and 1918 of 107,550, 64,404, 43,286 and 28,543 tons respectively.

July imports of iron ore were 632,618 tons against 316,156 tons in June and 411,289 tons per month for the first half. Pig iron imports in July were only 3011 tons as compared with 5722 tons in June. They were 14,384 tons per month for the first half, indicating a decided shrinkage as the year has progressed. There were no imports of ferromanganese, spiegeleisen or ferrosilicon in July, which was also the case in June.

Manganese ore imports in July were 12,679 tons which compares with 15,380 tons in June and 32,433 tons per month for the first half. They were 31,862 tons per month in the first half of 1918.

IRON AND INDUSTRIAL STOCKS

Street Optimistic Regarding Labor Outlook and Prices Advance

In spite of the declaration of the steel strike to become effective Sept. 22, security prices resumed their advance last week. The tendency of fluctuations was irregular with wide swings, but industrial stocks closed on Saturday with an average two and one-half points higher than they were the week before. The advance was continued on Monday and Tuesday with American Locomotive reaching a high record of 110½. Steel stocks were generally strong.

The range of prices on active iron and industrial stocks from Tuesday of last week to Wednesday of this week was as follows:

Allis-Chalm. com.	42½ - 47%	La Belle Iron pf.	— - 123
Allis-Chalm. pf..	94 - 96	Lackaw. Steel...	82 - 87
Am. Can. com...	52½ - 57%	Lake Sup. Corp.	21 - 21½
Am. Can. pf...	104½ - 105%	Midvale Steel ..	51 - 53
Am. Cr. & F. cm.	133 - 136½	Nat.-Acme	36½ - 39½
Am. Loco. com..	94 - 110½	Nat. E. & St. cm.	74½ - 79
Am. Loco. pf...	105½ - 106%	N. Y. Air Brake.	111½ - 123½
Am. Radiator cm.	295 - 301	Nova Scotia Stl.	74½ - 81½
Am. Ship com...	— - 127	Pittsb. Steel pf.	— - 92½
Am. Stl. Fdr. com.	39½ - 41	Pressed Stl. com.	88½ - 94½
Am. Stl. Fdr. pf.	95 - 96	Pressed Steel pf.	— - 101½
Bald. Loco. com...	118 - 139½	Ry. Stl. Spg. cm.	96 - 100½
Beth. Stl. Cl. B.	85 - 97½	Ry. Stl. Spg. pf.	— - 107
Cent. Fdry. com.	29 - 31	Republic com...	89½ - 94½
Cent. Fdry. pf..	59 - 59½	Republic pf...	— - 106
Chic. Pneu. Tool.	78½ - 79	Sloss com...	63½ - 67½
Colo. Fuel.....	44 - 46	Superior Steel ..	41½ - 42
Cru. Steel com...	173 - 190	Transue-Williams	57½ - 62½
Cru. Steel pf...	103 - 105	U. S. Alloy Steel	51½ - 52½
Deere & Co. pf..	— - 101	U. S. Pipe com...	31 - 32
Gen. Electric ...	166½ - 167½	U. S. Pipe pf...	65 - 65½
Gt. No. Ore. Cert.	43½ - 44½	U. S. Steel com...	101 - 106½
Gulf States Stl..	59½ - 61½	U. S. Steel pf...	114½ - 114¾
Int. Har. com...	133 - 134	Va. I. C. & Coke	— - 61
Int. Har. pf....	— - 116	Westingh. Elec...	54 - 55½

Dividends

The American Brake Shoe & Foundry Co., quarterly, 1½ per cent on the common and 3 per cent on the preferred, payable Sept. 30.

The Canadian Crocker-Wheeler Co., quarterly, 1½ per cent on the common and preferred stocks, payable Sept. 30.

The United Shoe Machinery Co., quarterly, \$1 on the common and 37½c. on the preferred, payable Oct. 4.

The Worthington Pump & Machinery Corporation, quarterly, 1½ per cent on the preferred A and B, payable Oct. 1.

The Cambria Steel Co., quarterly, 75c. and extra 25c. on the common, payable Sept. 15.

The J. I. Case Threshing Machine Co., quarterly, 1½ per cent on the preferred, payable Sept. 15.

The Crucible Steel Co. of America, quarterly, 1½ per cent on the preferred, payable Sept. 30.

The National Enameling & Stamping Co., quarterly, 1½ per cent on the common, payable Aug. 30, and 1½ per cent on the preferred, payable Sept. 30.

The New York Air Brake Co., quarterly, 2½ per cent, payable Sept. 26.

The Republic Iron & Steel Co., quarterly, 1½ per cent on the common, payable Nov. 1, and 1½ per cent on the preferred, payable Oct. 10.

The United States Cast Iron Pipe & Foundry Co., quarterly, 1½ per cent on the preferred, payable Sept. 13.

Industrial Finances

The Standard Tank Car Co., Sharon, Pa., is offering to the public \$3,000,000 of 8 per cent cumulative preferred stock. The company is a consolidation of the Standard Car Construction Co., the Standard Car Equipment Co. and the Standard Tank Car Co., whose combined net earnings for the first four months of 1919 were \$874,301, before allowing for Federal taxes. The amount earned the first four months this year was ten times the dividend requirement. Total net assets are given as \$6,000,000, twice the new stock issue. A branch of the company's business, in addition to the manufacture and sale of cars, is owning and leasing tank cars for the transportation of oil and other liquids.

George P. Bard, president of the Petroleum Iron Works Co., operating a plant at Petroleum, Trumbull County, Ohio, states as a result of rearrangement of the stock of the J. S. Cullinan interests, Houston, Texas, stock held by the Petroleum Iron Works Co. in the Pennsylvania Tank Car Co. and the Pennsylvania

Tank Line Co. has been exchanged for holdings in the American Republics Corporation of Delaware. The tank and the line companies are subsidiaries of the Petroleum company, while the American Republics Corporation is the holding concern for the Cullinan interests.

Shareholders of the Universal Tool Steel Co., 157 Dufferin Street, Toronto, Ont., have received the annual report of the company for the year ending Dec. 31, last. This shows gross profits on shell making of \$540,876, and a loss on bolt making of \$30,146. The net income for the year was \$278,382. A dividend of 2 per cent on the common shares absorbed \$189,824, and a dividend on the preferred shares amounting to \$6000 was paid. The common stock outstanding is \$9,500,000 and preferred \$100,000. The company was busy on munitions practically up to the end of last year, when, contracts being completed, the plant was closed down. Since that time, some progress has been made in connection with a bolt which, it is hoped, will find a market with railways and shipbuilding concerns. Sir Donald Mann is president of the company, and Sir William Mackenzie is also associated with it.

The Slick-Knox Co. Plans

The Slick-Knox Co., organized in Pittsburgh several months ago, which took over the plants of the Blaw-Knox Co. at Sharon, Pa., and the Hydraulic Drawn Forging Co., Ellwood City, Pa., expects to start shipment of automobile and truck frames, which will be its principal product, about Oct. 1. The Slick-Knox Co. acquired from the Blaw-Knox Co. a steel building located at Sharon, 115 x 500 ft., under which new foundations have been laid, and the building has been equipped with four 15-ton and two wall cranes of 3 tons each. There have also been installed in this building one 1800-ton press, one 1000-ton press, one 500-ton press, one 125-ton press and two 80-ton presses, all hydraulic. The Mesta Machine Co., Pittsburgh, is building for this concern one 4000-ton hydraulic press, which will be completed and installed in a short time. There have also been installed in the above building one 250-ton steam press, one 300-ton power press, one 125-ton power press, one No. 5 upsetter, in addition to other smaller hydraulic and power presses. A number of steam hammers have been put in, and in addition to the above, the Slick-Knox Co. purchased in the open market more than \$500,000 worth of other equipment. The company has under way a new machine shop 75 x 250 ft., and a new assembly shop 150 x 300 ft. These two buildings will have brick walls, steel window frames and sash, composition roofing of the Aiken type, and will be fireproof throughout.

The plant as originally owned by the Blaw-Knox Co. embraced 60 acres, but the Slick-Knox Co. has bought 30 acres more, has an option on 27 acres, which will be bought, and most of this ground will be used for future extensions. The company will have a capacity of 900 automobile and truck frames per day. It will also be equipped to make 10,000 rings per day for gears and ball bearings, 12,000 to 15,000 Slick anti-rail creepers, patented by E. E. Slick, also about 2000 forged return ells per day, and about 50 tons of 3-in. to 6-in. diameter balls per day. Later, the company will make steel tuyeres and bosh plates for blast furnaces. At its Ellwood City, Pa., plant the Slick-Knox Co. will make pressed steel industrial trucks of different types and designs, with a capacity of close to 200 per day. Later, it will make other steel specialties at its Ellwood City works. The general offices are in the Farmers' Bank Building, Pittsburgh, the officials being as follows: E. E. Slick, chairman; L. L. Knox, president; A. M. Moreland, treasurer and assistant secretary; A. R. McGill, secretary and assistant treasurer; William McIntyre, vice-president and sales manager; C. K. Strausbaugh, vice-president, in charge of operations; W. L. Schultz, chief engineer and assistant manager, and John Curtis, superintendent of the frame department. At the Ellwood City plant, L. C. Blackwell is general superintendent and E. L. Peterson is sales manager of the truck department.

Conditions in Great Britain as Observed by R. Sanford Riley

R. Sanford Riley, of Worcester, Mass., president of the Sanford Riley Stoker Co. and the Norton Co. of that city, is making a business tour of Great Britain, France, Belgium and Holland. In a letter received from him by his company he speaks vividly of conditions in England as he found them. Writing from Yorkshire he says:

"The most impressive and also the most depressive feature of England is the labor unrest. I suppose it is a natural reaction after the five years' strain of war and high production. Unless the producers get busy soon and begin to produce in quantity, this old country is going bankrupt. The free spending of borrowed money is demoralizing everybody, and especially the man who can not visualize the logical end of such spending. All he sees just now is the demand for his production and the ready money to spend."

"All this unrest has the effect in stopping investment, for capital can hardly be expected to take hold until conditions seem more stable."

"I am now in the heart of the Yorkshire coal-mining district, but the supply of coal has been most precarious, owing to strikes. They are actually bringing in coal from all over England, and in some cases from America. They are literally bringing coals to Newcastle, notwithstanding the old saying to the contrary. The worst of all is that many mines were flooded and ruined by action of the strikers. Many of the mines were saved from destruction only by the navy, who sent ashore wrecking outfits to pump them out. I do not know what can be done to save a country whose own people seem bent upon industrial suicide."

"There is a strong feeling here that America has now obtained the industrial as well as the financial supremacy of the world. They even worry here over the chances of Germany getting on her feet first, because the people there seem glad of the opportunity to work."

Chance for Labor-Saving Machinery

Labor-saving machinery never had a better chance in England. Before the war labor was hardly worth saving and investors knew it. Now they are waking up, and I believe that as soon as conditions are stabilized we will see a complete revolution in English methods and facilities. They feel kindly toward us, but no longer in the patronizing way we used to dislike. Now they respect our improved methods and equipment and are going to copy it as soon as they can. Their idea now seems to be to buy of us what is necessary and get it started; then they will make for themselves and will naturally favor all British-made machinery.

"It must be remembered, however, that England lives by foreign trade, and is not sufficient unto herself as America is. Therefore, we should always have a great English trade, especially in the necessities. We should also hold the world's largest trade in specialties that can be produced in quantities. We are conceded to be the greatest experts on quantity production."

Manufacturers Incorporate for South American Trade

The National Association of Manufacturers has incorporated under the Webb-Pomerene law under the title of the Namusa South American Corporation for the purpose of exporting all kinds of products to Central and South America. Headquarters have been established at 30 Church Street and officers have been elected as follows: R. M. Fullerton, president; O. P. Hollander, vice-president and treasurer; W. H. Cowdrey, chairman of the board of directors; Paul Noble, vice-chairman of the board of directors. The board of directors consists of fifteen executives of manufacturing firms in various parts of the country.

Separate departments will be established for groups of products along their natural lines, each department directing its own affairs so long as they are not inconsistent with the policy of the entire organization. The board of directors, consisting of one member from each

group, will control all matters of large relations in foreign trade affecting the common interests. The corporation will appoint trade ambassadors to various countries and will establish foreign offices to build up a trade information service covering credits, foreign competition, local economic conditions, tariff and customs intricacies and market requirements.

The association plans to establish similar organizations to foster export trade among its members to Europe, the Far East, Australia, South Africa and other primary markets.

Heavy Fabricated Steel Business in August

The total amount of steel bridge and building work put under contract in August amounted to about 141,300 tons, or the largest month's business since July, 1918. According to the records of the Bridge Builders and Structural Society, collected by George E. Gifford, secretary, 50 Church Street, New York, 78½ per cent of the capacity of the bridge and structural shops of the country was put under contract in August. This corresponds to the tonnage stated and makes the total amount of business done this year about 600,000 tons. About two-thirds of this amount was taken in the last three months. While the first six months of this year were leaner than the same period in the last eight years, the eight months of 1919 are now better than the eight months of 1913.

August's figures of 141,300 tons compare with 133,200 tons for July and 117,00 tons for June. The contracting for the first half was at the rate of 54,000 tons per month.

Side Lights on German Labor Situation

The labor situation in Germany is still unsettled, judging from the numerous items appearing, for example, in the French trade journals. In a recent issue of *L'Usine* a long list of paragraphs is printed covering conditions in Germany. For example, mention is made of a wire plant at Eidelstedt where piece workers formerly drew 950 kg. of wire in 9½ hr. and now draw 600 kg. in 8 hr. on the basis of day work.

At Frankfort-on-the-Main, the Peine rolling mills had a manufacturing cost in October, 1912, of 14.83 m. per ton of steel ingots, while the cost in December, 1918, was 41.26 m. This shows a cost 2½ times as great as before the war. The cost in 1912 with about normal rates of exchange was thus about \$3.50 per ton but the cost of December of last year at to-day's exchange rate is about \$1.50 per ton.

During the past week, a perceptible improvement in the car situation enabled better than usual shipments of steel from the Mahoning and Shenango valleys. Gondolas were reported available to the extent of 90 per cent of the needs, but only 50 per cent of the required box cars were procurable. The two valleys will be represented at a conference of traffic managers with Walker D. Hines, Railroad Administrator, to discuss ways and means to replenish the supply to the steel industry.

The Nova Scotia Steel & Coal Co., New Glasgow, N. S., will erect a by-products plant in the near future to cost \$2,000,000. The plant will be erected in connection with the company's works at Sydney Mines, N. S. The erection of the new ovens will be followed by further additions, including the erection of another blast furnace.

Control of John Lysaght, Ltd., manufacturer of sheet iron and steel, South Wales, has been secured by H. Seymour Bery of Merthyr Tydfill, acting with D. R. Llewellyn and Lady Rhodda. The firm was established in 1857, and, besides its domestic business, has extensive relations in Australia, New Zealand and Canada.

The Alaska Freezer Co., Winchendon, Mass., has purchased the White Mountain Freezer Co., Nashua, N. H., capitalized at \$300,000, the purchase price being \$900,000.

Non-Ferrous Metals

The Week's Prices

Cents Per Pound for Early Delivery

Sept.	Lake	Electro- lytic	Copper,		Lead		Spelter	
			New	York	New	St. Louis	New	St. Louis
			Y	Y	Y	Y	Y	Y
11....	23.00	22.50	56.25	5.90	5.75	7.65	7.30	
12....	22.75	22.25	56.37½	5.90	5.75	7.60	7.25	
13....	22.75	22.25	.....	5.90	5.75	7.60	7.25	
15....	23.00	22.50	56.50	6.25	6.00	7.55	7.20	
16....	23.00	22.50	56.50	6.25	6.00	7.50	7.15	

NEW YORK, Sept. 16.

Wednesday, Sept. 10, was a holiday in New York in honor of General Pershing and there were no markets. In general, conditions have changed but little. Copper demand is light and is being satisfied by metal from secondhands. The tin market is quiet but spot tin is scarce. The lead market has advanced while the market for zinc has continued to decline. Antimony is inactive and lower.

New York

Copper.—The domestic demand that is appearing continues to be satisfied by metal from dealers and secondhands. The moderate amount of sales that are being made are bringing from 22.25c. to 22.75c., New York, for electrolytic copper, with Lake copper averaging about 23c., New York. Most if not all of the large producers continue to hold their quotations on electrolytic copper at 23.50c. for early delivery and at 24c. for October and last quarter, and show very little disposition to make sales. An unconfirmed rumor is to the effect that one or two have parted with some of their metal at 23c. for early delivery. It is also stated but unconfirmed that high-grade Lake copper for early delivery has been sold by a producer in the last few days for 23.50c. Both of these transactions if consummated were below the prevailing levels of the larger producers. An interesting explanation of the supplies of metal which have appeared in the outside market is that some weeks ago the Japanese bought from 15,000 to 20,000 tons of copper and are now selling some of this in this market because of unexpected market conditions in Japan. One estimate is to the effect that at least 2000 to 3000 tons has come from this source.

Tin.—The market continues exceedingly quiet. The dominant factor is the steel situation and the impending strike. Buyers see no reason to buy in case of a strike, the effect of which would probably be to force prices down. It is the opinion in the trade, however, that there is more likelihood of an advance than a decline. The extraordinary situation in the monetary exchange values is also holding the market in check. If these two problems are settled satisfactorily it is believed that the tin market will advance considerably. Despite the fact that there are heavy amounts of tin afloat, most of this has been sold for consumption, and there is therefore a constant shortage of spot tin, which to-day is quoted at 56.50c., New York, for Straits; 55.25c., New York, for 99 per cent English tin, and 55.75c., New York, for American electrolytic tin. Quotations yesterday for future shipments from the East were 54c. for Straits tin for September-October shipment, 54.50c. for Straits tin for September shipment from England and 54c. for early October shipment of Lamb & Flagg. Arrivals of tin thus far this month have been 1575 tons, with 6965 tons reported afloat.

Lead.—On Monday the American Smelting & Refining Co. advanced its quotation ¼c. per lb. to 6.25c., New York, or 6c., St. Louis, and the outside market at once rose to this level. To many this step came as a surprise. It is believed that those close to the situation are confident that a shortage of lead is in prospect and that this explains the strength of the market. Demand has been only moderate.

Zinc (Spelter).—This market continues to show

weakness, and to-day prime Western is quoted largely nominal at 7.15c., St. Louis, or 7.50c., New York, for early delivery, with demand exceedingly light. There is an entire absence of quotations for last quarter with neither consumers nor sellers being interested. It is even stated that some producers are buying spelter because it is cheaper to buy it than to produce it in view of the high prices for ore and the advanced cost of production.

Antimony.—Wholesale lots for early delivery are quoted at 8.50c., New York, duty paid, with 5-ton lots and less held at 9c. to 9.25c., New York.

Aluminum.—Wholesale lots of No. 1 virgin metal, 98 to 99 per cent pure, are unchanged at 32c. to 33c., New York, for early delivery.

Old Metals.—The market is quiet and practically unchanged. Prices are as follows:

	Cents per lb.
Copper, heavy and crucible.....	22.00
Copper, heavy and wire.....	20.00
Copper, light and bottoms.....	18.00
Brass, heavy	14.50
Brass, light	11.00
Heavy machine composition.....	20.00
No. 1 yellow rod brass turnings.....	12.75
No. 1 red brass or composition turnings.....	16.00
Lead, heavy	5.50
Lead, tea	4.25
Zinc	6.00

Chicago

CHICAGO, Sept. 16.—Considerable copper is changing hands, but most of it is second-hand material, as producers are holding firmly to prices and are not quoting on futures. Current business in tin consists of small but numerous orders for both immediate and remote delivery. Lead has advanced a quarter of a cent, and while the market is active, business is confined largely to the smaller independents and second-hand dealers who are offering slight concessions. Spelter is weak and on the decline. Considerable antimony is being sold, but prices remain unchanged. We quote copper at 23c. to 23.50c. for carloads; tin, 60c. to 63c.; lead, 5.90c. to 5.95c.; spelter, 7.25c.; antimony, 10c. to 11c. On old metals we quote copper wires, crucible shapes, 17c.; copper clips, 16c.; copper bottoms, 15c.; red brass, 17c.; yellow brass, 11c.; lead pipe, 4.50c.; zinc, 5c.; pewter, No. 1, 30c.; tinfoil, 35c.; and block tin, 40c.; all these being buying prices for less than carload lots.

Cincinnati

CINCINNATI, Sept. 16.—The unsettled labor situation is given as the reason for the falling off in the demand for both copper and brass scrap. Very little contracting is being done and purchases are only for comparatively small quantities. Heavy copper, crucible copper and copper wire are all unchanged at 18c. to 18.50c.; heavy red brass at 18c. to 18.25c. Block tin pipe is firmer around 54c., but there is little to be had. Lead is weak at 4.25c. to 4.50c.

Hearing on Dumping of Ferromanganese Sept. 18

The Federal Trade Commission has arranged to give a hearing to the complaint of the Lavino Furnace Co., E. E. Marshall, the American Manganese Mfg. Co., the Miami Metals Co., the Southern Manganese Corporation and the Seaboard Steel & Manganese Corporation against British makers and their American agents on Thursday morning, Sept. 18, at 11 o'clock, in Washington. The defendants in the action are Frank Samuel Rogers, Brown & Co., C. W. Leavitt & Co. and Crocker Brothers, who represent the British manufacturers of ferromanganese in this country.

A steam-driven turbo-blower has been sold by the Rateau Battu Smoot Engineering Corporation, New York, to the Famatina Mining Corporation, Argentine Republic. The blower is to deliver 7000 cu. ft. of air at 14 lb. pressure. The speed of the unit is 22,000 r.p.m. The turbine operates at 150 lb. of steam pressure and a vacuum of 28 in.

Prices Finished Iron and Steel, f.o.b. Pittsburgh

The prices below, except on nuts, bolts, rivets and spikes, are based on those announced at Washington by the Industrial Board on March 20, 1919, effective the following day, which since that date have largely governed market transactions, though there have been variations, as indicated in market reports on other pages.

Freight rates from Pittsburgh on finished iron and steel products, including wrought iron and steel pipe, with revisions effective Nov. 1, 1918, in carloads, to points named, per 100 lb., are as follows: New York, 27c.; Philadelphia, 24.5c.; Boston, 30c.; Buffalo, 17c.; Cleveland, 17c.; Cincinnati, 23c.; Indianapolis, 25c.; Chicago, 27c.; St. Louis, 34c.; Kansas City, 59c.; St. Paul, 49½c.; Denver, 99c.; Omaha, 59c.; minimum carload, 36,000 lb. to four last named points; New Orleans, 38.5c.; Birmingham, 57.5c.; Pacific Coast, \$1.25; minimum carload, 80,000 lb. To the Pacific Coast the rate on steel bars and structural steel is \$1.315, minimum carload 40,000 lb.; and \$1.25, minimum carload 50,000 lb. On wrought iron and steel pipe the rate from Pittsburgh to Kansas City is 50c. per 100 lb., minimum carload 46,000 lb.; to Omaha, 50c., minimum carload 46,000 lb.; to St. Paul and Minneapolis, 49.5c.; minimum carload 46,000 lb.; Denver, 99c.; minimum carload 46,000 lb. Jacksonville, Fla., all rail, car lots, 41.5c.; less, 59c.; rail and water, car lots, 34.5c.; less, 46.5c. A 3 per cent transportation tax applies. On iron and steel items not noted above, rates vary somewhat and are given in detail in the regular railroad tariffs.

Structural Material

I-beams, 3 to 15 in.; channels, 3 to 15 in.; angles, 3 to 6 in., on one or both legs, ¼ in. thick and over, and Zees, structural sizes, 2.45c.

Wire Products

Wire nails, \$3.25 to \$3.50 base per keg; galvanized, 1 in. and longer, including large-head barbed roofing nails, taking an advance over this price of \$1.50, and shorter than 1 in., \$2.00. Bright basic wire, \$3.15 per 100 lb.; annealed fence wire, Nos. 6 to 9, \$3.00; galvanized wire, \$3.70; galvanized barbed wire and fence staples, \$4.10; painted barbed wire, \$3.40; polished fence staples, \$3.40; cement coated nails, \$2.85 base; these prices being subject to the usual advances for the small trade, all f.o.b. Pittsburgh, freight added to point of delivery, terms 60 days net, less 2 per cent off for cash in 10 days. Discounts on woven-wire fencing are 60½ per cent off list for carload lots, 59½ per cent for 1000-rod lots, and 58½ per cent off for small lots, f.o.b. Pittsburgh.

Bolts, Nuts and Rivets

Large structural and ship rivets.....\$3.90 base
Large boiler rivets.....\$4.00
1/4 in., 5/16 in. and 7/16 in. diameter.....60-5 per cent off list
Machine bolts, hp. nuts, ¾ in. x 4 in.:
Smaller and shorter, rolled threads.....60 per cent off list
Cut threads.....50-10 per cent off list
Larger and longer sizes.....45-5 per cent off list
Machine bolts, c.p.c. and t. nuts, ¾ in. x 4 in.:
Smaller and shorter.....40-10-5 per cent off list
Larger and longer.....40 per cent off list
Carriage bolts, ¾ in. x 6 in.:
Smaller and shorter, rolled threads.....50-10 per cent off list
Cut threads.....50 per cent off list
Larger and longer sizes.....40-5 per cent off list
Lug bolts.....60 per cent off list
Plow bolts, Nos. 1, 2 and 3.....50-5 per cent off list
Plow bolts, Nos. 4 to 10.....50-5 plus 20 per cent off list
Hot pressed nuts, sq. blank.....3.10c. per lb. off list
Hot pressed nuts, hex. blank.....3.10c. per lb. off list
Hot pressed nuts, sq. tapped.....2.85c. per lb. off list
Hot pressed nuts, hex. tapped.....2.85c. per lb. off list
C.p.c. and t. sq. and hex. nuts, blank.....3.10c. per lb. off list
C.p.c. and t. eq. and hex. nuts, tapped.....2.85c. per lb. off list
Semi-finished hex. nuts:
5/8 in. and larger.....70 per cent off list
9/16 in. and smaller.....75-10 per cent off list
Stove bolts in packages.....75-10 per cent off list
Stove bolts in bulk.....75-10-2½ per cent off list
Tire bolts.....60-10 per cent off list

The above discounts are from Aug. 4, 1919.

All prices carry standard extras, Pittsburgh basis.

Wire Rods

No. 5 common basic or Bessemer rods to domestic consumers, \$52; chain rods, \$60; screw, rivet and bolt rods and other rpsd of that character, \$60. Prices on high carbon rods are irregular. They range from \$65 to \$75, depending on carbons.

Railroad Spikes and Track Bolts

Railroad spikes, ½ in., 9/16 in. and larger, \$3.35 per 100 lb. in lots of 200 kegs of 200 lb. each or more; spikes, ¾ in., 7/16 in. and smaller, \$3.85 to \$4 per 100 lb. in lots of 200 kegs of 200 lb. each or more; track bolts, \$4.35 to \$4.50 per 100 lb. in carload lots of 200 kegs or more, with the usual extras for small lots. Boat and barge spikes, \$3.85 to \$4 per 100 lb. in carload lots of 200 kegs or more, f.o.b. Pittsburgh.

Terne Plates

Prices of terne plate are as follows: 8-lb. coating, 200 lb., \$13.80 per package; 8-lb. coating, I. C., \$14.10; 12-lb. coating, I. C., \$15.80; 15-lb. coating, I. C., \$16.80; 20-lb. coating, I. C., \$18.05; 25-lb. coating, I. C., \$19.30; 30-lb. coating, I. C., \$20.30; 35-lb. coating, I. C., \$21.30; 40-lb. coating, I. C., \$22.30 per package, all f.o.b. Pittsburgh, freight added to point of delivery.

Iron and Steel Bars

Steel bars at 2.35c. from mill. Prices on bar iron are 2.75c.

Wrought Pipe

The following discounts are to jobbers for carload lots on the Pittsburgh basing card:

Steel		Butt Weld		Iron	
Inches	Black Galv.	Inches	Black Galv.	Inches	Black Galv.
1/8, 1/4 and 3/8...	50 1/2 24	1/8 and 1/4...	29 1/2 21 1/2		
1/2...	54 1/2 40	5/8...	30 1/2 3 1/2		
5/8 to 3...	57 1/2 44	1 1/2...	34 1/2 21 1/2		
		3 1/2 to 1 1/2...	30 23 1/2		
Lap Weld		Lap Weld		Lap Weld, extra strong, plain ends	
2...	50 1/2 38	1 1/4...	24 1/2 9 1/2	1/8, 1/4 and 3/8...	28 1/2 11 1/2
2 1/2 to 6...	53 1/2 41	1 1/2...	31 1/2 17 1/2	1/2...	33 1/2 20 1/2
7 to 12...	50 1/2 37	2...	32 1/2 18 1/2	5/8 to 1 1/2...	34 1/2 21 1/2
13 and 14...	41...	2 1/2 to 6...	31 1/2 18 1/2	2 to 3...	31 1/2 18 1/2
15...	38 1/2...	7 to 12...	31 1/2 18 1/2		
Butt Weld, extra strong, plain ends		Lap Weld, extra strong, plain ends		Lap Weld, extra strong, plain ends	
1/8, 1/4 and 3/8...	46 1/2 29	1 1/4...	25 1/2 10 1/2	2...	48 1/2 37
1/2...	51 1/2 39	1 1/2...	31 1/2 17 1/2	2 1/2 to 4...	50 1/2 40
5/8 to 1 1/2...	55 1/2 43	2...	33 1/2 20 1/2	4 1/2 to 6...	50 1/2 39
2 to 3...	56 1/2 44	2 1/2 to 4...	35 1/2 23 1/2	7 to 8...	46 1/2 33
		4 1/2 to 6...	34 1/2 22 1/2	7 to 12...	41 1/2 28
		7 to 8...	26 1/2 14		
		9 to 12...	21 1/2 9 1/2		

To the large jobbing trade an additional 5 per cent, is allowed over the above discounts, which are subject to the usual variations in weight of 5 per cent.

On butt and lap weld sizes of black iron pipe, discounts for less than carload lots to jobbers have been seven (7) points lower (higher price) than carload lots and on butt and lap weld galvanized iron pipe have been nine (9) points lower (higher price).

Boiler Tubes

The following are the prices for carload lots, f.o.b. Pittsburgh:

Lap Welded Steel	Charcoal Iron
3 1/2 to 4 1/2 in...	40 1/2 31 1/2 to 4 1/2 in...
2 1/2 to 3 1/4 in...	30 1/2 3 to 3 1/4 in...
2 1/4 in...	24 2 1/2 to 2 1/4 in...
1 1/4 to 2 in...	19 1/2 2 to 2 1/4 in...
	1 1/4 to 1 1/2 in...

Standard Commercial Seamless—Cold Drawn or Hot Rolled	Per Net Ton	Per Net Ton
1 in...	\$327	\$207
1 1/4 in...	267	177
1 1/2 in...	257	167
1 1/2 in...	207	187
	4 in...	207

These prices do not apply to special specifications for locomotive tubes nor to special specifications for tubes for the Navy Department, which will be subject to special negotiations.

Sheets

Makers' prices for mill shipments on sheets of United States standard gage in carload and larger lots are as follows:

Blue Annealed—Bessemer

	Cents per lb.
No. 8 and heavier...	3.50
Nos. 9 and 10 (base)...	3.55
Nos. 11 and 12...	3.60
Nos. 13 and 14...	3.65
Nos. 15 and 16...	3.75

Box Annealed, One Pass Cold Rolled—Bessemer

Nos. 17 to 21...	4.15
Nos. 22 to 24...	4.20
Nos. 25 and 26...	4.25
No. 27...	4.30
No. 28 (base)...	4.35
No. 29...	4.45
No. 30...	4.55

Galvanized, Black Sheet Gage—Bessemer

Nos. 10 and 11...	4.70
Nos. 12 to 14...	4.80
Nos. 15 and 16...	4.95
Nos. 17 to 21...	5.10
Nos. 22 to 24...	5.25
Nos. 25 and 26...	5.40
No. 27...	5.55
No. 28 (base)...	5.70
No. 29...	5.95
No. 30...	6.20

Tin-Mill Black Plate Bessemer

Nos. 15 and 16...	4.15
Nos. 17 to 21...	4.20
Nos. 22 to 24...	4.25
Nos. 25 to 27...	4.30
No. 28 (base)...	4.35
No. 29...	4.40
No. 30...	4.40
Nos. 30 1/2 and 31...	4.45

PERSONAL

M. F. Lichauco of Manila, P. I., was in Pittsburgh last week for the purpose of buying machinery to be used in the canning industry in Manila. He will study the methods used by American can makers, and will visit a number of important plants making cans. He said that 200 students had been selected from various schools in Manila to come to America to study the various industries, in order to advance the study of these in the Philippine Islands. Mr. Lichauco was graduated from the Massachusetts Institute of Technology in 1916.

George W. Crane has been appointed successor to Marshall J. Root, formerly president Seneca Falls Mfg. Co., Inc., Seneca Falls, N. Y., who accepted a position as vice-president of the Fairbanks Co., New York, as announced in THE IRON AGE of Sept. 4. Mr. Crane has had a successful business experience with Pierce, Butler & Pierce Mfg. Corporation, manufacturer of boilers and radiators and jobber of plumbing supplies. He started with the corporation in 1900 as time-keeper, later becoming salesman and finally assistant sales manager.

J. D. Weekes has been appointed district representative, with offices at 704 Keith Building, Syracuse, N. Y., of the Heppenstall Forge & Knife Co., Pittsburgh, and Heppenstall Forge Co., Bridgeport, Conn.

A. W. Foote, long identified with the machine-tool industry in the Central West as president of the Foote-Burt Co., Cleveland, maker of drilling machinery, has retired coincident with the reorganization of that company, having been in business 40 years. Mr. Foote, with a partner, established the present Foote-Burt Co. in 1892 and five years later bought out his partner. The business was then conducted as Foote, Burt & Co. until 1906, when it was incorporated under its present name, and Mr. Foote has been president of the company since that time. For the past two years he has been president of the Cleveland Branch of the National Metal Trades Association.

Erwin L. Malone has been appointed Cleveland district representative of the Hess Steel Corporation, Baltimore, Md. His headquarters for the present will be at the Cleveland Athletic Club, Cleveland.

George W. Short, who retired as vice-president of the Sharon Steel Hoop Co. on Aug. 31, was presented with a gold watch by associates at a farewell reception at the Poland Country Club, Youngstown.

H. Earl Sweitzer has been appointed sales manager of the Allsteelequip Co., Aurora, Ill., in charge of sales and advertising. For the past year Mr. Sweitzer has been assistant sales manager, and previous to that was advertising manager for several years with the Appleton Mfg. Co., Batavia, Ill., farm implement and tractor manufacturer.

Clarence W. Watson, Jere H. Wheelwright and Sprigg D. Camden, all with the Consolidation Coal Co., Baltimore, have been elected directors of the West Virginia Metal Products Co.

W. C. Irwin has been appointed district sales representative in St. Louis and the Southwest, with offices in the Frisco Building, St. Louis, of the Dunbar Mfg. Co., 5133 West Lake Street, Chicago, manufacturer of railway and automobile supplies. Mr. Irwin has been in the railway supply business for several years and at present is district representative for the Boss Nut Co., Chicago, Railroad Supply Co., Chicago, and the Woven Steel Hose & Rubber Co., Trenton, N. J. During the war Mr. Irwin was captain in the Engineering Corps of the United States Army and is a son of Clarence E. Irwin, manager for J. G. Miller, railway supplies.

Thomas S. Disler, formerly traffic manager and purchasing agent Fort Pitt Steel Casting Co., McKeesport, Pa., has resigned to become assistant secretary in charge of traffic and sales of the Kendall Lumber Co.,

Oliver Building, Pittsburgh. Frank T. Taylor succeeds him.

I. H. Carbaugh has been named general foundry superintendent of the United Roll & Foundry Co., Ravenna, Ohio.

Pierce G. Smith has been made vice-president of the American Malleables Co., Lancaster, N. Y., and Owosso, Mich. He was formerly sales manager of the company.

Frank B. Roth, Philadelphia, has accepted the position of chief engineer of the Lehigh Structural Steel Co., Allentown, Pa. He was formerly president of the Philadelphia Chapter of the American Association of Engineers.

W. A. Downing has accepted the position as sales manager with the Cutter & Wood Supply Co., Boston. For the past three and a half years he has been associated with the George F. Foss Machinery & Supply Co., Montreal, Que., in the joint capacity of manager of the small tool department and general advertising. Prior to his connection with the Foss organization he specialized in small tool equipment, acting in various capacities with many of the leading American manufacturers. A. G. Clark, who has been accountant for the George F. Foss Machinery & Supply Co. for the past five years, will succeed Mr. Downing as manager of the small tool department.

Edwin S. Jackman, of E. S. Jackman & Co., Chicago, agents of the Firth-Sterling Steel Co., has presented the Glen View Golf Club of that city a piece of bronze statuary, consisting of a group of boy scouts with a dog on a pedestal above a pool, with a fountain for birds. It was dedicated as a Roosevelt memorial to the Boy Scouts of America. He also presented the club three artistic drinking fountains.

William Parry, superintendent of bar mills at the Lowellville, Ohio, works of the Sharon Steel Hoop Co., has resigned to become assistant superintendent of the United Alloy Steel Co., Canton, Ohio. He was formerly with the Carnegie Steel Co. at Sharon, Pa.

P. W. Twyman, formerly president and general manager Inter-State Automobile Co., Muncie, Ind., has become associated with Nash Motors Co., Kenosha, Wis., and assigned to duty as general manager of the new factory being established in Milwaukee for the manufacture of four-cylinder Nash passenger cars. The project contemplates a new works costing \$1,500,000 and employing upward of 4000 workmen. It will be ready to start production about Dec. 1.

S. S. Newton, president Luther Grinder Mfg. Co., Milwaukee, has resigned as an officer and director after being associated with the management of the business 18 years. His successor is W. T. Hardy.

A. A. Gloetzner, formerly manager of the Detroit office of the Covert Gear Co., has been elected president and general manager of the company. He will make his headquarters at the Lockport, N. Y., offices of the company, but will spend two days a week in Detroit.

President Wilson has commissioned Jesse G. Vincent of the Packard Motor Car Co. a colonel in the United States Army, Officers' Reserve Corps, Aviation Section of the Signal Corps. This distinction is in recognition of the work done by Mr. Vincent in helping in the development of the Liberty aircraft engine.

P. J. Stokvis, managing director W. J. Stokvis, Ltd., Arnhem-Amsterdam-The Hague, Holland, has recently arrived in this country. He is located at the Hotel Commodore, New York. He desires to form connections for export trade with American makers of gas, steam and water pipe and tubing. For many years his company has been in the iron and steel brokerage business in Holland.

E. M. Mentzer, manager of the Pope tin-plate plant of the Weirton Steel Co. at Steubenville, Ohio, for several years, has been promoted to the management of the Weirton tin plate plant of that company, Weirton, W. Va., succeeding J. C. Griffin, who has resigned to go with the Bethlehem Steel Co. Mr. Mentzer will be succeeded at the Pope plant by W. F. Singer, formerly

assistant to J. C. Williams, general manager of the Weirton Steel Co.

F. J. Tucker, assistant general manager Merchant Shipbuilding Corporation, Harriman, Pa., has become general manager of the company's yard at Chester, Pa., formerly the Chester Shipbuilding Co., recently consolidated. W. T. Wilson, works manager at the Harriman yard, will become assistant general manager at the plant to succeed Mr. Tucker. The present assistant works manager, William Kennedy, will become works manager at the plant, succeeding Mr. Wilson.

Walter E. Flanders, who retired recently as president of the Maxwell Motor Car Co., has become interested in the L. D. Rockwell Co., Detroit, manufacturers' agent, handling automobile parts and accessories.

Homer C. Johnstone, formerly steel manager of Gaston, Williams & Wigmore, has become steel and metals manager of William H. Knox & Co., Inc., export and import merchant, 18 Old Slip, New York.

Dr. George C. Barlow has resigned as president of the United States Tractor & Machinery Co., Menasha, Wis., because of ill health, and is succeeded by Joseph G. Sailor, formerly president Sailor-Whitmore Machine Co., Menasha, who has been vice-president of the United States company.

John C. Craig has been named superintendent of the rolling mills of the Steelton, Pa., plant of the Bethlehem Steel Co. He succeeds W. W. Leck, resigned. Mr. Craig was formerly assistant superintendent of the rolling mills.

Paul B. Rogers, president and general manager Wetmore Reamer Co., Milwaukee, who recently suffered a severe attack of infantile paralysis, has recovered sufficiently to be removed to his home.

Employees at the blast furnace of E. J. Lavino & Co., Philadelphia, at Lynchburg, Va., have presented J. J. Becker, retiring manager, a handsome gold watch. Mr. Becker will become manager of a furnace operated by associated interests at Sheridan, Pa. He will be succeeded at the Lynchburg plant by M. D. Langhorne.

E. M. Sternberg, vice-president, and C. G. Hayssen, assistant general manager Sterling Motor Truck Co., Milwaukee, sailed Sept. 16 for Europe to spend three or four months in investigating various phases of the motor truck industry in England, France, Belgium, Italy and the Scandinavian countries. The trip may be extended to India and Australia.

A. C. House, who has been connected with the ore sales department of M. A. Hanna & Co., Cleveland, has resigned and become a member of Hord-Curtis & Co., Cleveland brokers.

A. E. Roberts, Roberts & Watts, engineers and contractors, 71 Broadway, New York, writes that he has not resigned as vice-president of the Hedden Iron Construction Co., New York. An item to this effect was printed in this column in the issue of Aug. 7, in explaining that A. M. Conneen, Jr., had been made vice-president and general manager of the company. Eugene B. Hedden, president Hedden Iron Construction Co., in speaking of the subject says: "Andrew M. Conneen, Jr., formerly structural sales agent for the Bethlehem Steel Co., in the New York district, is vice-president and general manager of the Hedden Iron Construction Co., in place and stead of Arthur E. Roberts, who is no longer with this company."

R. Sanford Riley, head of the Sanford Riley Stoker Co., Worcester, Mass., attended the centenary of the death of James Watt at Manchester, England, Sept. 16, as the official representative of the American Society of Mechanical Engineers.

William Barry has resigned as superintendent of the Pittsburgh Iron & Steel Foundries Co. at Midland, Pa., his place being filled temporarily by B. F. Parlett, Jr., assistant superintendent. Mr. Parlett has been with the company for about six years, and was recently promoted from the position of production clerk to that of assistant superintendent.

Herbert M. Du Puy, chairman Crucible Steel Co. of America, Pittsburgh, who recently underwent a severe

operation in a hospital in New York, is reported as getting along nicely, and expects to resume his duties in a short time.

Thomas Silk has resigned as superintendent of the steel barrel and range boiler department of the Whittaker-Glessner Co., Portsmouth, Ohio. Since 1911 he had been connected with the company, developing, installing and operating new lines in stamping and fabricating sheet steel. He has accepted the position of superintendent of the plant of the Boyle Mfg. Co., Los Angeles, Cal.

OBITUARY

JOHN RICHARD KIDSTON LAW, chairman of the firm of William Jacks & Co., Ltd., Glasgow, Scotland, iron and steel merchants, died recently of a hemorrhage of the brain at the age of 62. In his early life he was a tea planter in Ceylon, but about 1890 became associated in business with the late William Jacks and his brother, Bonar Law. After the retirement of his brother and the death of Mr. Jacks, Mr. Law became senior member of the firm. He was well versed in science and mechanics and had made a number of inventions, including a mechanical tea roller which is largely used in Ceylon and India. At the time of his death he was engaged in the bringing out of a new type of engine.

ANDREW WATSON, president Andrew Watson & Sons, iron and metal dealers in Brooklyn, died at his home in that city Sept. 7 in his 68th year. He was born in Cumberland, Scotland, and has been identified with the iron industry for 40 years, having been in the foundry business until 1889, when he entered the scrap business. Three of his sons are in the same line of industry as the father: Andrew Watson, Jr., and James G. Watson, who were associated with him; and Thomas G. Watson of the New York office of John J. Kelleher, Inc.

OLIVER HAROLD LANE, representative in South America of the Hopdale Mfg. Co., Milford, Mass., textile machinery, died recently in Buenos Aires at the age of 50. He was renowned as a linguist, speaking seven languages fluently.

Purchasing Agents will Meet in Philadelphia Next Week

The National Association of Purchasing Agents will meet in convention Sept. 22, 23 and 24 at the Bellevue-Stratford Hotel, Philadelphia. The association has a membership of about 2500. The first session of the convention will be devoted to addresses of welcome and reports of committees. At the second meeting on the afternoon of Sept. 22, F. A. Marsh, Link Belt Co., Chicago, will speak on "Relations between the Purchasing Agent and His Company Organization," and G. W. Sanborn, United Engineering & Foundry Co., Pittsburgh, will speak on "Relation Between the Purchasing Agent and Salesman." Among other speeches at the session, Sept. 23, will be "Relation of Traffic and Stores Departments to Purchasing," by T. J. Heffernan, American Tube & Stamping Co., Bridgeport. The final meeting will be devoted to election and installation of officers. Numerous entertainments, luncheons and sightseeing tours have been arranged.

American Iron and Steel Institute to Meet at Hotel Commodore

The sixteenth general meeting of the American Iron and Steel Institute will be held at the Hotel Commodore, New York, Oct. 24 and 25. The meeting last May was held at the Hotel Pennsylvania. For many years previously meetings were held in the Waldorf-Astoria.

STRIKE NOT EXPECTED

Judge Gary says He Does Not Seek Trouble— Some Companies Want to Fight

After the usual meeting of the finance committee of the United States Steel Corporation at the New York office, Tuesday afternoon, Judge Gary, chairman of the board, came out of his office and greeted a group of newspaper men with the remark: "Well, boys, there is no news to tell you."

"Do you expect the strike to go on?" was the first question asked, and the judge replied that he did not know.

"I understand," said another newspaper man, "that the union has gotten only about 10 to 20 per cent of your employees; is that true?"

"That is the information which we have received, but I don't know how many may have joined the union during the last few days." This was with a smile to indicate that he was not very much worried about recent accessions to the union.

Another newspaper man said: "It is reported in some quarters that some steel companies want a strike."

"Perhaps some of the independents would like to have a strike, but I never want trouble," replied the judge as he smiled and turned away.

Later an official of a large independent company said: "It is true that some of the companies do want the strike to go ahead, feeling that now is as good a time as any to whip the gang of radicals which seems to dominate the labor situation."

The Unionization Program

Figures as to the unionization campaign among iron and steel workers are given in a report made at a meeting of heads of international unions, by William Z. Foster, secretary-treasurer. At the meeting Aug. 20 in the Ohio Hotel, Youngstown, Foster submitted the report and a sub-committee of six was named to wait on Judge Gary and seek an interview with him. The report shows the number of accessions to membership in various industrial centers from September, 1918, to May, 1919. For example, at Chicago, the new members were as follows: September, 664; October, 4770; November, 1315; December, 5075; January, 1604. No accessions were reported for the next four months and the total was 13,428. Membership at other points was reported as follows: Gary, Ind., 927; Indiana Harbor, 464; Joliet, Ill., 1857; Butler, Pa., 1255; Canton, Ohio, 5; Charleroi, Pa., 509; Cleveland, 734; Coatesville, Pa., 383; Farrell, Pa., 8; Johnstown, Pa., 4397; Minnesota, 44; New Castle, Pa., 13; Pittsburgh, 276; Pueblo, Colo., 456; Sharon, Pa., 332; Steubenville, Ohio, 520; Warren, Ohio, 32; Wheeling, W. Va., 2023; Youngstown, Ohio, 2970, making a grand total of 30,633. The following statements are appended as notes:

From records it appears that returns from Gary, Indiana Harbor and Joliet, after the month of September, 1918, were made as of Chicago district.

April returns from Johnstown, Pa., include receipts for part of February and all of March, not theretofore reported.

McKeesport reported as of Pittsburgh district.

From the records it appears that the total receipts from the inception of the drive to May 31, 1919, were \$68,072.25, and the total disbursements were \$52,892.84, leaving a cash balance on hand of \$15,179.41. The established cost of each member secured based on 30,633 members and the total disbursements shown is \$1,726.

Washington Expects Postponement

WASHINGTON, Sept. 16.—Washington observers seemed confident to-night that to-morrow's conference of the steel workers organization committee in Pittsburgh would result in a postponement of the threatened strike. President Gompers of the American Federation of Labor is not going to Pittsburgh, declaring he is not a member of the committee. He has used all his in-

fluence, however, to prevent the calling of a strike before the White House conference meets Oct. 6. Both Government and labor officials who are interested in the situation believe that President Gompers's influence will overrule the efforts of the more radical leaders who insist that the strike must begin next Monday.

Past and Future Government Scrap Sales

Recent awards of Government scrap through the Boston district ordnance office, 19 Portland Street, include the following: 5994 lb. 155 mm. steel adapters at Scituate, Mass., to H. Cohen & Co., Chelsea, Mass., for \$8.50 per gross ton; 45,897 lb. special chrome nickel steel at the Cape Ann Tool Co., Pigeon Cove, Mass., to the Cape Ann Tool Co. for \$2.50 per 100 lb. No bids were received for 322 gross of steel drive screws and all bids were rejected on 125 tons of steel bars of free cutting screw stock at H. C. Dodge, Inc., South Boston, the highest bid being that of the American Metal Co., Philadelphia, at \$33.40 per net ton. Bids will be received until noon, Sept. 24, on 75,663 lb. round brass rods at the Babson-Dow Mfg. Co., Roxbury, Mass., and for 7409 lb. brass strip at the Scituate Proving Ground storage plant, Scituate, Mass. The following are future offerings through sealed proposals at seven district ordnance offices:

Through the Bridgeport District Salvage Board, Liberty Building, the following material will be offered until 1:30 p.m., Sept. 23: At Government Warehouse 188, Wire Wheel Corporation of America, Springfield, Mass., about 1,386.642 lb. cold rolled Bessemer screw stock, 2½ in. diameter, 12 ft. long; and about 321,117 lb. bar steel, 3 7/32 in. diameter, 12 ft. long; at Government Warehouse 193, Remington Arms Co., Seaview Avenue, Bridgeport, about 260,153 lb. high carbon tool steel dies.

The Pittsburgh office, Chamber of Commerce Building, requests bids until 11 a.m., Sept. 22, on about 369,864 lb. cold drawn open-hearth steel scrap, 1½-in. round, at Columbia Steel & Shafting Co., Carnegie, Pa.; at Morris & Bailey Co., Pittsburgh, about 47,285 lb. hot rolled steel in coils; and at West Leechburgh Steel Co., West Leechburgh, Pa., about 75,200 lb. cold rolled strip steel in coils. At the Phillips Sheet & Tinplate Co., Weirton, W. Va., about 25,475 lb. strip steel in various sizes is offered, also about 103,610 lb. fluted nickel steel ingots, 16 in. x 7 ft. 6 in., at Edgewater Steel Co., Oakmont, Pa. At the Westinghouse Electric & Mfg. Co., Pittsburgh, is offered 140,836 lb. mill length steel for nose bushings.

At the Cleveland office, Plymouth Building, the following materials will be sold by negotiation: At National Acme Co., Cleveland, about 949,599 lb. cold drawn Bessemer screw stock and at McMyler Interstate Co., Bedford, Ohio, about 632,040 lb. cold rolled bright screw stock. At the Willys-Overland Co., Toledo, is about 159,089 lb. flat, hot rolled bar steel, 4½ in. x 1½ in.

The Detroit office, Book Building, offers for proposals until 11 a.m., Sept. 24, about 8510 gross tons 155 mm. high explosive shell forgings, at Harroun Motors Corporation, Wayne, Mich.

The Toronto office, 35 Victoria Street, offers for bids until Sept. 19, at 3 p.m., the following, of United States origin: At F. W. Ellis Co., Toronto, about 200 gross tons M. K. 111A steel adapters in process of machining, made from round bar Bessemer screw stock; and at McKinnon Industries, St. Catharines, Ont., about 227 gross tons hot rolled round steel bars.

The St. Louis office, Missouri State Life Building, asks proposals until 11 a.m., Sept. 24, on approximately 2034 gross tons of speigleisen, at the Scullin Steel Co., St. Louis, and about 4000 gross tons of forgings for 8-in. common steel shells at the Wagner Electric Mfg. Co., St. Louis, on which bids must be in by 11 a.m., Sept. 23.

At the Philadelphia office, 1710 Market Street, until 2:30 p.m., Sept. 23, a total of about 10,771.875 lb. of 9.2 H.E. shell forgings are offered, at William Wharton, Jr. & Co., Easton, Pa. Until 2:30 p.m., Sept. 24, this office offers about 1,500,000 lb. of 9.2 shell forgings at the Wharton company, and about 1,510,710 lb. 75 mm. Worthington shell forgings at the Worthington Pump & Machinery Corporation, Hazleton, Pa.

Large Fairbanks Power Hammers Announced

Fairbanks power hammers are now made in sizes with a 400-lb. and a 500-lb. ram. Heretofore these hammers have been built only up to 300 lb. weight of ram. The 400 and 500 lb. sizes have been built particularly for the heavier classes of work such as is found in locomotive and car shops, shipbuilding plants, tube and steel mills, also on oil well tool work. The hammers are manufactured by the United Hammer Co., Oliver Building, Boston, Mass.

Machinery Markets and News of the Works

TOOL PLANTS ARE BUSY

Manufacturers Report Good Volume of Orders

Deliveries Are Being Extended and Tendency of Prices Is Upward—Moline Plow Co.

Buys 250 Tools from Government

A majority of the machine-tool manufacturing plants of the country, particularly those making well-established lines of tools, are enjoying a prosperous business. Deliveries on some tools are being extended further. The tendency of prices continues upward, recent advances including about 15 per cent on some makes of upright drills and about 10 per cent on radial drills.

The inability of the Moline Plow Co., Moline, Ill., to obtain prompt deliveries on tools for which it recently inquired caused it to buy Government surplus equipment. About 250 machines were purchased, 90 per cent of which will come from Government stocks.

The General Motors Corporation is one of the most active buyers in the Central West. Its purchases for the Samson tractor works at Janesville, Wis., total

about \$350,000. Montgomery Ward & Co., Chicago, have bought about 100,000 worth of machine-tool equipment for their gas engine plant at Springfield, Ill.

Expansion of the automobile industry at Detroit and vicinity continues. The Packard Motor Car Co., Detroit, will invest about \$1,750,000 in new buildings and equipment. The American Commercial Car Co., Detroit, will greatly increase its manufacturing facilities. The Jaxon Steel Products Co., Jackson, Mich., is increasing its capacity 35 per cent. The Hudson Motor Car Co., Detroit, is planning for the erection of a new plant to manufacture the Essex automobile. About \$1,000,000 will be expended for equipment. The Firestone Tire & Rubber Co., Akron, Ohio, will spend \$3,000,000 for additions and equipment. New machine, forge and pattern shops are included in the plans.

Cincinnati machine-tool builders have sufficient business on hand to keep their plants running full. About 75 per cent of current business is domestic and 25 per cent export. Export business is not so brisk as it has been, but some orders are still coming from Belgium and England and a few scattered ones from France.

The American Locomotive Co. has purchased 15 electric cranes from the Shaw Electric Crane Co. Nine of these cranes are for its steel castings plant at Chester, Pa., which is being enlarged.

New York

NEW YORK, Sept. 16.

Some of the makers of drills have advanced prices, upright drills going up about 15 per cent, and radial drills 10 per cent. Most lines of tools are now practically on the same price basis as existed prior to the termination of the war. It is pointed out that material is no cheaper, except possibly on a few minor items, while labor costs have advanced this year. It is predicted that some additional price advances may be expected within the next few months.

Both domestic and export trade in machine tools in this market is quiet. No large foreign inquiries are reported. Domestic business consists almost wholly of small lots or single tools, but of these there is a fair amount, inquiries and orders from New England, in particular, maintaining a consistently good rate.

It is reported in the trade that the E. W. Bliss Co., Brooklyn, which recently purchased the plant of the Consolidated Press Co., Hastings, Mich., will enlarge that plant and purchase considerable new equipment. Details of its requirements have not yet been made known.

The American Locomotive Co. has purchased 15 overhead cranes from the Shaw Electric Crane Co. for three of its plants. Nine cranes will be shipped to the company's steel castings plants at Chester, Pa.; three to the Schenectady works and three to the Montreal works. Nine of the 15 cranes are to be of 10-ton capacity, one 15-ton, three 20-ton and three 30-ton. The Robins Conveying Belt Co., New York, has bought two 10-ton cranes from the Bedford Foundry & Machine Co.

The White Metal Specialties Corporation, Brooklyn, has been incorporated with a capital stock of \$100,000 by R. L. Gray, T. W. Constable and M. M. Kotzen, 51 Chambers Street, to manufacture collapsible metal tubing and kindred products.

The W. C. Van Brunt Iron Works, Fourteenth Avenue, Long Island City, N. Y., is completing plans for the construction of a new one-story plant, 300 x 310 ft., on Borden Avenue, near Marsh Street.

The Middletown Rubber Co., New York, has been incorporated with a capital stock of \$1,000,000 by S. A. Thompson,

M. J. Friedman and J. T. MacDonald, 280 Broadway, to manufacture automobile tires and other rubber products.

The New York Wire Cloth Co., 233 Broadway, New York, is taking bids through Architect J. A. Dempwolf, Cassel Building, York, Pa., for the erection of a two-story and basement addition, 45 x 80 ft., on East Market Street, York, to cost about \$30,000.

The Old Colony Steam Auto Corporation, New York, has been incorporated with a capital of \$100,000 by E. P. Vandepoel, P. Kline and H. L. MacCartan, 108 West Fourteenth Street, to manufacture automobiles.

The Sinclair Rubber Co., New York, has been incorporated with a capital stock of \$25,000 by C. McA. Pyle, L. Solomon and E. P. Brown, 152 East Ninetieth Street, to manufacture rubber products.

The United Steel & Metal Corporation, 15 Park Row, N. Y., has increased its capital stock to \$50,000.

The Wilson-Maeulen Co., 781 East 142nd Street, New York, manufacturer of pyrometers and kindred equipment, is having plans prepared for the erection of a new three-story brick addition, 50 x 100 ft.

The K. & K. Supply Co., New York, has been incorporated with a capital stock of \$20,000 by L. and J. and A. Koral, 495 Gravesend Avenue, Brooklyn, to manufacture metal products.

The Bertolini Motor Carburetor Co., New York, has been incorporated with a capital stock of \$100,000 by S. Mangiapane, B. Venusti and J. Coppola, 291 Broadway, to manufacture carburetors and similar products.

P. R. Mallory, Inc., Fox Island Road, Port Chester, N. Y., manufacturer of tungsten wire and other wire products, is having plans prepared for a two-story addition to its plant, 40 x 112 ft., to cost about \$25,000. Lockwood, Greene & Co., 101 Park Avenue, New York, is the architect.

The Consolidated Products Co., New York, has been incorporated with a capital stock of \$15,000 by W. M. Sheldon, J. Guter and A. M. Kahn, 1051 Boston Road, Bronx, to manufacture forging, chemical and oil mill machinery and parts.

The Raymond Engineering Corporation, New York, has been incorporated with a capital stock of \$150,000 by

M. Somken, H. O. Zurich and M. Cohen, 1226 Boston Road, Bronx, to manufacture foundry products.

The Adeco Industrial Co., New York, has been organized to manufacture engines, parts, engineering appliances, etc. Albert West and Frederick Cardway, Rochelle Heights, New Rochelle, N. Y., head the company.

The Supreme Metal Products & Refining Works, Inc., New York, has been incorporated with a capital stock of \$30,000 by R. Martin, H. Goldberg and B. Kemins, 212 Madison Street, to manufacture tools and other mechanical products.

The Robbins & Myers Co., 30 Church Street, New York, manufacturer of fans and small electric motors, with works at Springfield, Ohio, has arranged for a note issue of \$2,500,000. C. F. McGilvray is president.

The United States Rubber Co., 1790 Broadway, New York, with works at New Brunswick, N. J., Baltimore, Md., and other points, has increased its capital stock from \$120,000,000 to \$300,000,000.

The United Aircraft Engineering Co., 52 Vanderbilt Avenue, New York, is planning for the location of a new manufacturing plant in the vicinity of New York. It is looking for a site aggregating about 60 acres, and will establish a plant with manufacturing area totaling 40,000 sq. ft.

The Arrow Metal Bed Corporation, New York, has been incorporated with a capital stock of \$10,000 by J. and W. Greenblatt, F. Topper, 235 West 112th Street, to manufacture metal bedsteads.

The Consolidated Embossing Co., 407 Broome Street, New York, manufacturer of metal specialties, has acquired a three-story building, 20 x 65 ft., at 185 Lafayette Street, and connecting with its present building for an extension.

M. Welte & Sons, Inc., 667 Fifth Avenue, New York, manufacturer of pianos and parts, has filed plans for the construction of a new four-story plant, 90 x 156 ft., on 133rd Street, near Lincoln Avenue, to cost about \$70,000.

The Entz Motor Corporation, New York, has been incorporated with a capital stock of \$200,000, forming a consolidation of the Entz Motor Patents Corporation and the Owen Magnetic Motor Car Co. The Owen magnetic car will be built in the future by the International Fabricating Co., Wilkes-Barre, Pa., which recently acquired property for the establishment of a new automobile works exclusively for such purpose. G. F. Morrison, D. C. Durland and R. H. Swartout, 141 Broadway, are incorporators of the new organization. W. N. Dennison is president of the factory branch of the company.

Charles Cory & Son, 290 Hudson Street, New York, manufacturers of nautical instruments, etc., have filed plans for the erection of a new six-story factory, 76 x 150 ft., at the corner of Varick and King streets, to cost about \$185,000. Russell G. Cory, 39 Cortlandt Street, is engineer.

The American & British Mfg. Co., 120 Broadway, New York, has called a special meeting for Oct. 2, to arrange for a dissolution of the corporation. Charles W. Waller is secretary.

The American Teksag Products Co., North Pelham, N. Y., has been incorporated with a capital of \$25,000 by L. M. Koehler, C. Adams and J. Meyer, 1 Madison Avenue, New York, to manufacture boiler metal preserving specialties, metal products, etc.

The Eureka Lighting Supply Co., New York, has been incorporated with a capital stock of \$8,000 by S. Geller, I. J. Shirmel and H. M. Fuerstein, 11 Graham Avenue, Brooklyn, to manufacture electric and gas fixtures and metal lighting specialties.

Henry Waldes, New York, has leased the factory of the Kindel Bed Co., Anable Avenue and Creek Street, Long Island City, N. Y., comprising a four-story reinforced-concrete structure, for the establishment of a new plant for the manufacture of small metal specialties. The lease is for a term of years and aggregates \$350,000.

The State Hospital Commission, Albany, N. Y., E. S. Elwood, secretary, has completed plans for a new power plant at the State Hospital, Central Islip, 80 x 120 ft., to cost about \$150,000, with equipment. Plans are now being prepared by the Commission for a new power plant for the State Hospital at Utica.

The J. H. Harrison Co., Addison, Steuben County, N. Y., has been incorporated with an active capital of \$12,875 by C. H. Owens, E. Tompkins and F. H. Wheaton to manufacture farm implements and parts.

John Heyrich, Inc., Montclair, N. J., has been incorporated with a capital stock of \$25,000 by John Heyrich, Sr. and Jr., and Frank A. Heyrich, to manufacture galvanized iron products.

The Internal Marine Construction Co., Jersey City, N. J., has been incorporated in Delaware with capital of \$5,000,-

000 by H. E. A. Rabbe, Jersey City; W. A. Bischoff, Newark, N. J., and Robert Spiro, New York, to manufacture internal combustion engines.

The Commonwealth Products Corporation, 417 Rosehill Street, Elizabeth, N. J., will build a one-story addition to its plant, 50 x 120 ft., to cost about \$12,000.

The American Consolidated Electric Co., Newark, N. J., has been incorporated with a capital stock of \$100,000 by Frederick A. Schiller, John H. McCaulley and David Lesnik, to manufacture incandescent lamps and electrical products.

The Sims Magneto Co., North Arlington Avenue, East Orange, N. J., has filed plans for the erection of a two-story addition, 67 x 153 ft., to cost about \$59,000. It has recently increased its capital from \$1,250,000 to \$1,500,000.

The American Gage Co., 618 South Orange Avenue, Newark, N. J., has filed notice of organization to manufacture snap gages and similar specialties. M. L. Clark heads the organization.

The Utility Sales Co., Newark, has been incorporated with a capital of \$100,000 by Frederic M. Payne, M. L. Jarvis and George A. McCall to manufacture special utility machinery.

The Newark Auto & Body Repair Co., 131 Newark Street, Newark, has filed notice of organization to manufacture automobile parts, etc. Thomas J. Gorman, 249 High Street, heads the company.

The United Electric & Repair Co., 458 Sanford Avenue, Newark, has filed notice of organization to manufacture electrical specialties, etc. E. H. Thomas, 508 Norwood Street, East Orange, N. J., heads the company.

The Composition Machinery Corporation, Newark, has been incorporated with a capital of \$100,000 by J. A. Bernhard, C. F. Burroughs and Carl Fergus, to manufacture machinery and parts.

The Turman Repair Co., 88 Somerset Street, Newark, has filed notice of organization to manufacture auto parts in connection with an automobile repair works. Isaac Turman, 165 Pennsylvania Avenue, heads the company.

The Federal Auto Radiator Co., 406 Washington Street, has filed notice of organization to manufacture automobile radiators, fenders, etc. Simon Goldman heads the company.

The Emzee Electrical Conduit & Mfg. Co., New York, has been organized by T. Ganer and M. E. Meredith, 2100 Albemarle Road, Brooklyn, to manufacture electrical specialties.

The Brooklyn Ship Repair Corporation, New York, has been incorporated in Delaware with capital stock of \$750,000 by Charles Karlson, Brooklyn, and Robert E. Shortall, View Court, Brighton Heights, New York.

The Taflan Machinery Exchange, Inc., New York, has been incorporated with a capital stock of \$10,000 by S. Lantz, R. Brown and S. Friedman, 855 Tremont Avenue.

The Monarch Carburetor Lock Co., New York, has been incorporated with a capital stock of \$100,000 by W. H. Rosenfeld, N. A. Unger and H. H. Waller, 140 Nassau Street, to manufacture locking devices, etc.

The new six-story reinforced-concrete plant to be erected by Charles Cory & Son, 290 Hudson Street, New York, as announced in THE IRON AGE of Aug. 28, will be located on a site recently purchased at Varick and King streets.

The Liberty Starters Corporation, 200 Fifth Avenue, New York, manufacturer of motor-starting devices, has increased its active capital from \$315,000 to \$1,100,000.

The Improved Propeller Corporation, New York, has been incorporated with a capital stock of \$150,000 by J. Kunse and W. Kedzierski, 42 Broadway to manufacture airplane propellers, etc.

Julius Nueske & Sons, Inc., New York, has been incorporated with a capital stock of \$15,000 by J. F. and O. Nueske, 9505 Farragut Street, Brooklyn, to manufacture engines, boilers, etc.

The Spadone Machine Co., 126 Duane Street, New York, has filed notice of dissolution.

The Electric Keyless Lock Co., New York, has been incorporated with a capital stock of \$10,000 by H. Gottesman, S. Greene and A. M. Block, Woolworth Building, to manufacture special locking devices.

The Cellu Metal Corporation, Rochester, N. Y., has been incorporated with a capital of \$150,000 by Archie B. Progin, William C. Heindl and Frederick C. Monkhouse, 7 Averill Avenue, to manufacture metal specialties and toys.

The Gleason Works, 1000 University Avenue, Rochester, N. Y., manufacturer of gear-cutting machinery, etc., has awarded a contract to A. Friederich & Sons, 710 Lake Street, for a one-story foundry to cost about \$18,000.

Buffalo

BUFFALO, Sept. 15.

The Rand Co., 47 Clinton Avenue, Tonawanda, N. Y., manufacturer of files and other products, is having plans prepared by Architects R. J. Reidpath & Sons, Builders' Exchange Building, Buffalo, for a one-story addition, 66 x 124 ft.

The Buffalo Body Corporation, Buffalo, has been incorporated with a capital stock of \$1,000,000 by R. J. MacKenzie, K. B. Macdonald and W. R. Daniels to manufacture automobile and other vehicle bodies.

The Carborundum Co., Buffalo Avenue, Niagara Falls, N. Y., manufacturer of abrasive products, has had plans prepared for a three-story addition to its plant, 99 x 224 ft., to cost about \$150,000, including equipment.

The National Plyer Co., Buffalo, has been incorporated with a capital of \$25,000 by K. B. MacDonald, C. J. Haeberli and W. R. Daniels to manufacture plyers and general hardware specialties.

The International Abrasive Co., Niagara Falls, N. Y., has arranged for a preferred stock issue of \$700,000, to be used in part for proposed extensions. It is a consolidation of the Superior Corundum Wheel Co., Dominion Abrasive Wheel Co., Harrison Supply Co., and National Abrasive Co., specializing in the manufacture of grindstones and other abrasive products, with plants at Waltham and Amesbury, Mass., Niagara Falls, Ontario and Mimico, a suburb of Ontario. The company plans for the erection of three additional furnaces and other extensions.

The Buffalo Jewelry Mfg. Co., Buffalo, has been incorporated with a capital stock of \$200,000 by L. and F. M. Block and M. M. Cohen to manufacture jewelry.

The Forsyth Metal Goods Co., East Aurora, N. Y., has increased its capital stock from \$30,000 to \$75,000.

The H. H. Franklin Mfg. Co., South Geddes Street, Syracuse, N. Y., manufacturer of automobiles, has had plans prepared for a one-story addition, 25 x 77 ft., on Magnolia Street.

The Gutliph-Knapp Patterns & Castings Corporation, Syracuse, has been incorporated with a capital stock of \$25,000 by W. H. Gutliph, J. Picard and C. E. Knapp, to manufacture castings and other metal products.

The Gabrielson Mfg. Corporation, Syracuse, has been incorporated with an active capital stock of \$50,000 by C. G. Gabrielson, A. Meldrum and M. V. White to manufacture machinery, foundry equipment, etc.

The Davenport Machine Tool Co., Rochester, N. Y., has been incorporated with a capital stock of \$625,000 by C. R. Burt, W. S. Davenport and C. W. McKay to manufacture machine tools and other machinery.

Bastian Brothers Co., 69 Mt. Hope Avenue, Rochester, manufacturer of metal novelties, has broken ground for the erection of its new plant on Clinton Avenue North, where an 11-acre tract has been acquired. The proposed plant, with equipment, is estimated to cost about \$300,000, and is expected to be ready for occupancy Jan. 1. It will provide a largely increased capacity. The company is arranging to increase its capital from \$750,000 to \$1,000,000. T. E. Bastian is president, and F. J. Bastian vice-president and treasurer.

The Clark & Norton Mfg. Co., South Main Street, Wellsville, N. Y., manufacturer of gas engines, oil-well machinery, etc., has filed notice of change of name to James Rowden & Co. of America, Inc.

The Wire Wheel Corporation, Buffalo, has let contract to the John W. Cowper Construction Co., Fidelity Building, for an additional machine shop, two stories, at its plant, Elmwood Avenue and the New York Central Railroad Belt Line, to cost \$63,000.

The Edlund Machinery Co., Cortland, N. Y., will enlarge the capacity of its plant, having recently increased its capital stock from \$63,000 to \$157,500 for this purpose.

New England

BOSTON, Sept. 15.

The United Shoe Machinery Co. has been buying a few special machines for one of its New England plants. The Compressed Steel Shafting Co., Boston, has been inquiring for grinding machines. The New London Ship & Engine Co., New London, Conn., which has been making Diesel engines for submarines, is now making larger sizes of the engine for commercial boats and may be a possible buyer of additional equipment.

The Manufacturers' Foundry Co., Waterbury, Conn., has plans under way for the erection of several additions to its plant, to include a two-story brick foundry, 50 x 120 ft.; one-story brick shop, 50 x 50 ft., and one-story building 100 x 100 ft.

The Forging Service Co., Springfield, Mass., has been incorporated with capital stock of \$25,000 by J. Howard Jones, Noyes C. French and Walter H. McCarthy to manufacture iron and steel forgings and similar specialties.

The American Boiler Tube Thimble Co., 95 Orms Street, Providence, R. I., has filed notice of organization to manufacture metal products. John F. McKenna heads the company.

C. A. Maynard, Green Street, Northampton, Mass., manufacturer of hoes and other garden tools, is planning for the immediate rebuilding of the forging shop at his works, recently destroyed by fire, with loss estimated at \$10,000.

The Torrington Co., Springfield Street, Chicopee, Mass., manufacturer of swaging machines, needles and other metal equipment, is planning for the immediate erection of a four-story addition, 50 x 100 ft., to cost about \$50,000.

The American Tube & Stamp Co., Bridgeport, Conn., has filed plans for alterations and extensions in its plant on Cherry Street, to cost about \$6,000.

O. T. Hungerford, New Hartford, Conn., has leased the Greenwood Mill property and plans for the establishment of a new plant for the manufacture of fiber products under a special process. The initial works will give employment to about 50 persons.

The Whitlock Coil Pipe Co., Elmwood, Conn., manufacturer of feed-water heaters, pipe bends, etc., has awarded a contract to the Ellison Construction Co., 100 Wellington Street, Hartford, Conn., for the erection of a new one-story machine shop, 48 x 71 ft., to cost about \$13,000.

The Framingham Forge Co., Framingham, Mass., has acquired property at Northboro, Mass., and plans for the erection of a new one-story forge shop to cost about \$30,000.

The Norwalk Tire & Rubber Co., Norwalk, Conn., is completing plans for the erection of its proposed new plant at Winnepauk, to comprise a six-story reinforced-concrete factory, 80 x 128 ft.

The Revere Rubber Co., 355 Valley Street, Providence, R. I., has arranged for the immediate erection of the proposed new one-story addition, 30 x 120 ft., to cost about \$20,000.

The American Radiator Co., New Haven, Conn., with headquarters at Chicago, has awarded a contract to the Larkin-Carey Co., New Haven, for the erection of a new two-story brick building, 100 x 135 ft., on South Front Street, to cost \$85,000.

The Wells Hardware Co., Inc., Holyoke, Mass., announces that the new building which it will erect is to accommodate its increasing retail business and is not for manufacturing purposes, as was erroneously stated in these columns a few weeks ago.

Philadelphia

PHILADELPHIA, Sept. 15.

The Hess-Bright Mfg. Co., Front and Erie streets, Philadelphia, manufacturer of ball bearings, has filed plans for the erection of a two-story brick and stone addition, 43 x 105 ft., to cost about \$63,000.

B. F. Hoffman, 235 North Broad Street, Philadelphia, local agent for the Ford automobile, has acquired the three-story brick and concrete building, 36 x 350 ft., at Broad and Wood streets, for the establishment of a new repair and service works. The consideration given for the structure is reported at \$500,000.

The Crompton & Knowles Loom Works, Worcester, manufacturer of textile machinery, with branch plant on Glenwood Avenue, near Sixteenth Street, Philadelphia, has disposed of this site, aggregating about 20 acres, and will remove its plant to one recently acquired at Allegheny Avenue and Rosehill Street.

The Jasper M. Dorsey Co., Inc., Philadelphia, has been incorporated with a capital stock of \$25,000 under Delaware laws by F. R. Hansell and E. M. MacFarland, Philadelphia, to manufacture machinery.

The Aetna Engineering Co., Philadelphia, has leased a portion of the building at 143-145 North Third Street from George Sachsenmaier & Co., manufacturer of dynamos, etc., for the establishment of new works.

Pusey & Jones, Wilmington, Del., are planning to remodel and improve their New Jersey and Philadelphia shipyards, at an estimated cost of about \$3,000,000. It is proposed to remodel the New Jersey yard for repair work exclusively, with the construction of two new dry docks of about 6000 to 10,000 tons capacity, and to enlarge the shop facilities. The Pennsylvania yard will be arranged for new shipbuilding work. The company has recently received a contract for the construction of two large ferryboats. W. G. Cox is general manager.

The East Penn Foundry Co., Lehigh, Pa., is having plans

prepared for the erection of a one-story addition, 100 x 250 ft., to cost about \$25,000.

The Boyerstown Brass Foundry Co., Boyerstown, Pa., has been incorporated in Delaware with capital stock of \$50,000, by Warren M. Johnson, Boyerstown; Addison R. May, Pottstown, and Garrett J. Henves, Philadelphia, to manufacture brass and other castings.

Louis Sussman, Allentown, Pa., has acquired the plant and machinery of the Allentown Iron Mfg. Co., Furnace Street, Allentown, with adjoining property, 400 x 700 ft., for a consideration of about \$40,000, and proposes to operate the works for the production of iron and steel specialties.

The Wyoming Shovel Works, Wyoming, Pa., has awarded a contract to the Turner Construction Co., 242 Madison Avenue, New York, for the erection of a one-story addition, 80 x 100 ft., to cost \$150,000, including equipment.

The Lancaster Machine & Structural Iron Works, Dillsburg, Pa., has been sold to Lancaster business men. William De Haven, Lancaster, is president of the present company. The names of the men into whose hands title will soon pass have not been made public. The company produces grey iron castings, but the scope of its business will be enlarged.

The Atwater Kent Mfg. Co., Philadelphia, has been incorporated to manufacture mechanical, electrical and other equipment. It is capitalized at \$5,000 and the incorporators are A. Atwater Kent, Ardmore, Pa.; W. J. Little, Philadelphia, and Paxson Deiter, Bryn Mawr.

The Philadelphia Metal Lathing & Furring Co., Philadelphia, has been incorporated to manufacture metal lathing and furring. The capital stock is \$5,000 and the incorporators include M. H. Jester, 102 North Dewey Street; John J. Bauer, 2139 North Twelfth Street, and F. W. Billerbeck, 2819 North Twelfth Street, Philadelphia.

The Wayne Tool Mfg. Co., Waynesboro, Pa., has increased its capital stock from \$30,000 to \$100,000. William H. Strauss is secretary.

The William Woodhouse Chain Mfg. Co., Bristol, Pa., has been incorporated with a capital stock of \$25,000, to manufacture chains, blocking and hoists, at Edgely, Pa. Wilfred C. Woodhouse, 833 West State Street, Trenton, N. J., is the principal incorporator.

The Wilkes-Barre Iron & Wire Works Co., Wilkes-Barre, Pa., has been incorporated with a capital stock of \$10,000 to manufacture elevator enclosures, fire escapes, etc. Hugh P. Watters, Scranton, is the principal incorporator.

The Agasote Millboard Co., Trenton, N. J., is in the market for a new or second-hand hydraulic press of the following specifications: Size of platen, 8 ft. 9 in. long, x 5 ft. 6 in. wide, hot or cold plate; working pressure, 2000 lb. per sq. in. on rams; platen pressure, 300 lb. per sq. in. A press considerably larger or of heavier pressure might answer the purpose, but nothing smaller.

Baltimore

BALTIMORE, Sept. 15.

The Rolbein Co., Inc., Calvert Building, Baltimore, has been incorporated with \$400,000 capital stock to manufacture sealing and packing machinery, accessories, etc. The incorporators are Joseph P. Murray, Frank S. Muzzey and Theresa Snyder.

The Union Shipbuilding Co., Fairfield, Baltimore, plans the construction of additions to cost about \$500,000. It is also trying to secure additional land upon which it contemplates building a new plant to cost several million dollars.

The Premier Mfg. Co., 507 Calvert Building, Baltimore, has been incorporated with \$25,000 capital stock to manufacture leather specialties. The incorporators are J. Maurice Buchheimer, Herbert L. Dreifus and J. Albert Baker.

The Delaware Marine & Motor Co., foot of Commerce Street, Wilmington, Del., has filed plans for the erection of a new one-story machine shop.

The Artite Metal Seams Co., Wilmington, Del., has been incorporated with a capital of \$150,000 by S. L. Mackey, M. C. Kelly and J. D. Frock, to manufacture machinery for metal seaming work.

The Belt & Machine Co., Petersburg, Va., is having plans prepared for the construction of a new one-story building at Washington and Market streets, to cost about \$20,000.

The American Can Co., Richmond, Va., is planning for extensions and improvements at its local works to cost about \$10,000.

The Southern Stove Works, Richmond, Va., has awarded a contract to the Austin Co., Bullitt Building, Philadelphia, for the erection of a new plant to cost about \$500,000, including equipment.

The Fairbanks Co., 416 Broome Street, New York, manufacturer of scales, etc., is planning for the erection of an addition to its plant at Rome, Ga., estimated to cost \$100,000. A new engine house will also be constructed.

The Porter & Moore Co., 421 Water Street, Norfolk, Va., desire prices on 80-hp. tubular boilers.

Hackley Morrison, Richmond, Va., is interested in quotations on second-hand jack-hammer drills.

The Baltimore Tube Co., Wicomico and Ostend streets, Baltimore, has perfected plans for the immediate erection of new two-story works, 77 x 146 ft., to cost about \$55,000. The company specializes in the manufacture of copper and brass tubing.

The Randall X-Ray Co., Washington, D. C., has been incorporated in Delaware, with capital of \$100,000, by William T. Randall, George T. and Willis W. Parker, Washington, to manufacture X-Ray machines.

The Simmons Co., Kenosha, Wis., manufacturer of metal beds, has acquired a site on Fort Avenue, near the Key Highway, Baltimore, on which it will build a plant 150 x 760 ft., to give employment to about 1000 operatives.

The Bostwick-Lyon Bronze Co., Waynesboro, Pa., is planning for the establishment of works to give employment to about 225 men at the former plant of the National Supply Co., Hagerstown, Md., recently acquired for a consideration said to be about \$60,000. It will specialize in the production of brass and bronze castings.

The Rice Motors Co., Madison Street and North Avenue, Baltimore, is planning for the erection of a two-story automobile repair shop and service works, 150 x 250 ft., at Whitelock and McCulloch streets, to cost about \$100,000. Smith & May, 1133 Calvert Building, are architects.

The Lobdell Car Wheel Co., foot of Christiana Street, Wilmington, Del., has filed plans for the erection of an addition, 52 x 55 ft., to cost about \$16,000.

The Kinston Iron & Mantel Works, Kinston, N. C., is planning for the erection of a new one-story machine shop, 50 x 80 ft., and a one-story wood-working plant, 40 x 60 ft. S. T. Pace is secretary.

The Lombard Iron Works & Supply Co., Atlanta, Ga., is in the market for an 8 or 10 ft. boiler plate roll.

Chicago

CHICAGO, Sept. 15.

The volume of sales continues encouraging although delays in delivery are becoming more of a handicap than heretofore. The delivery problem, in fact, is believed to have caused the Moline Plow Co. to purchase Government tools rather than new machines for its tractor plant. This company has ordered about 250 tools, and although some new machinery was bought, about 90 per cent of the equipment purchased was from the Government. The best deliveries on high-class tools range from two to five months. Decreased production by the individual workman is given as the reason. The morale of labor is particularly bad at Cincinnati where a strike is regarded as imminent. It is generally felt that if a walkout is inevitable, the sooner it comes the better, as the present spirit prevailing among the workmen is decidedly unsatisfactory and an insurmountable obstacle to all efforts in the direction of operating efficiency.

The General Motors Corporation continues to buy equipment for its Samson tractor plant at Janesville, Wis., its purchases up to date being in the neighborhood of \$350,000. Montgomery, Ward & Co., Chicago, have bought about \$100,000 worth of equipment for its farm gas engine plant at Springfield, Ill. Other current orders are small. The demand for pipe machines is more active than for some time. A number of inquiries for pipe machines and engine lathes have been received from the stock yards repair shops.

One manufacturer of drill presses has advanced prices from 10 to 15 per cent.

The Whitman & Barnes Mfg. Co., manufacturer of machine tools, 1000 West 120th Street, Chicago, has awarded a contract to Stone & Webster, 38 South Dearborn Street, Chicago, for the construction of a one-story power house, 98 x 120 ft., to cost \$10,000. The company has also retained Stone & Webster to prepare plans for additional facilities to cost \$1,000,000.

The Arthur Jones Electrical Co., manufacturer of automobile electrical equipment, 2837 South State Street, Chicago, has engaged the F. M. Barton Co., architects, 305 South Wabash Avenue, to prepare plans for a one- and two-story factory, 125 x 125 ft., to be erected at the northeast corner of Calumet Avenue and Twenty-ninth Place, at a cost of \$60,000.

The Boye Needle Co., manufacturer of sewing machine parts, 4333 East Ravenswood Avenue, Chicago, has awarded a contract for the construction of a two- and three-story

factory, 40 x 162 ft., at 4339-41 East Ravenswood Avenue, to cost \$40,000.

The Federal Electric Co., manufacturer of electric vehicles, has retained George C. Nimmons & Co., architects, Chicago, to prepare plans for a one-story factory and boiler house, to be erected at the southwest corner of State and Eighty-seventh streets.

The Hill Pump Valve Co., 2307 Archer Avenue, Chicago, has awarded a contract for the erection of a one-story factory, 213 x 256 ft., at 4601-21 Belmont Avenue, to cost \$150,000.

The Paul J. Daemicke Co., manufacturer of refrigerators and store fixtures, 1336 Fullerton Avenue, Chicago, has awarded a contract for the construction of a two-story factory, 67 x 102 ft., at a cost of \$50,000.

The Cochran Mfg. & Forging Co., Woodlawn Avenue and Seventy-eighth Street, Chicago, is the new name of the corporation formerly known as the Cochran Pipe Wrench Co.

The Simplex Candy Machinery Co., 155 North Clark Street, Chicago, has been incorporated with \$200,000 capital stock by John F. and Earl C. Moeller and Emil Reinhold.

The Eisemann Magneto Corporation, Brooklyn, N. Y., has purchased a lot, 52 x 144 ft., at 3641 Michigan Boulevard, Chicago, as the site of a two-story factory branch, to cost \$50,000.

The Ryan Car Co., Hegewisch, Ill., has commenced the construction of a steel car shop, 60 x 600 ft., which with complete equipment will cost \$350,000.

The Moline Iron Works, Moline, Ill., has purchased the Moline Three-I baseball park as the site of a malleable foundry, 110 x 400 ft., and an enameling and finishing building, 110 x 360 ft. Construction contracts have been awarded. The estimated cost is \$300,000.

The Moline Plow Co., Moline, Ill., has started the reconstruction of its tractor plant which was destroyed by fire Aug. 24.

The American Can Co., New York, has leased factory space in Waukegan, Ill., where it will remove its two plants now located at Hooperston, Ill.

The List Mfg. Co., Havana, Ill., manufacturer of a clutch for motor boats and for line shafts, will enlarge its plant in the near future. Four additional engine lathes and other machine tool equipment will be installed.

The Franklin Barn Equipment Co., Monticello, Iowa, is in the market for a power riveting machine to drive a tinned rivet No. 2, 5-16 in. long and $\frac{1}{4}$ in. in diameter, through three thicknesses of No. 28 gage galvanized sheets.

The Hamler Boiler & Tank Co., 3908 South Halsted Street, Chicago, is having plans prepared for a one-story addition, to cost about \$50,000. A new power plant will also be constructed.

The Belden Mfg. Co., 2300 South Western Avenue, Chicago, manufacturer of electric wire cables, has arranged for the immediate erection of its proposed new four-story plant, 90 x 115 ft., on West Van Buren Street, to cost about \$100,000.

R. S. Moline, 7622 Ingleside Avenue, Chicago, has arranged for the immediate erection of a new one-story machine shop, 50 x 50 ft., at 7936 South Chicago Avenue.

The Rocky Ford Milling & Electric Co., Rocky Ford, Kan., has completed plans for the erection of its proposed new power plant, estimated to cost about \$500,000, including equipment.

Fire, Sept. 4, destroyed a section of the works of the General American Tank Corporation, East Chicago, Ill., including three large buildings, with loss estimated at \$250,000, including equipment.

The Signode System, Inc., Chicago, manufacturer of box strap and other metal products, with works on West Lake Street, has increased its capital stock of \$325,000 to \$560,000.

H. G. Fisher & Co., 2341 Wabauska Avenue, Chicago, manufacturers of X-ray machinery, have arranged for the immediate erection of a new three-story plant, 60 x 110 ft., to cost about \$70,000.

Fire, Sept. 3, destroyed a portion of the foundry at the plant of the Albert Lea Grader Co., Albert Lea, Minn., with loss estimated at \$25,000.

Herman C. Peglow, 507 Park Avenue, St. Paul, Minn., is having plans prepared for the erection of a new two-story plant, 70 x 113 ft., on Aurora Avenue, to be equipped for the manufacture of metal signs and other specialties. The structure will cost about \$25,000.

The American Wire Fabric Co., Blue Island, Ill., has commenced the erection of an addition to its works to cost about \$1,000,000, including machinery.

The Thomas Railway Track Appliance Co., First and Washington streets, Kansas City, Mo., is having plans pre-

pared for a new one-story and basement plant, 160 x 220 ft., to cost about \$60,000.

Catalogs Wanted

The American Cement Machine Company, Inc., manufacturer of concrete and contractors' equipment, Keokuk, Iowa, desires two catalogs each from manufacturers and jobbers of iron, steel and mill supplies, for its engineering and purchasing departments, together with price lists.

Pittsburgh

PITTSBURGH, Sept. 15.

The Pittsburgh Valve Foundry & Construction Co., Twenty-sixth Street and Allegheny Valley Railroad, manufacturer of valves, steam supplies and mechanical specialties, has completed plans for the erection of a one-story addition to its plant.

The Standard Tank Car Co., Masury, Ohio, near Sharon, Pa., manufacturer of tank cars, steel underframes and steel plate work, has arranged for a stock issue of \$3,000,000. The company is a consolidation of the Standard Car Construction Co., the Standard Car Equipment Co. and the Standard Tank Car Co. The present plant capacity covers the construction of 30 completed tank cars in twenty-four hours. G. F. Wood-Smith is vice-president.

The New Bottle Protector Co., New Kensington, Pa., has been incorporated in Delaware with a capital stock of \$1,000,000 by F. J. Pessolant, New Kensington; Pasqual J. Greco, Tarrytown, Pa., and Nicholas Libretti, Pittsburgh, to manufacture bottle protectors, receptacles and other mechanical specialties.

The Standard Steel Spring Co., Fourth Avenue, Coraopolis, Pa., is having plans prepared for the construction of two new one-story buildings.

The Homestead Valve Co., Homestead, Pa., has awarded a contract to the Austin Co., Union Arcade, Pittsburgh, for the erection of a new one-story machine shop, 40 x 60 ft., on Sixth Street, to cost about \$15,000.

The West Virginia Rail Co., Huntington, W. Va., is planning for the immediate rebuilding of the portion of its works recently destroyed by fire, with loss estimated at \$20,000.

The Atlas Electric Co., Pittsburgh, capitalized at \$10,000, has been incorporated to manufacture locks, keys, electrical machinery, etc. The incorporators are Elmer E. Mosberger, 6222 Broad Street; P. S. Walsh, 6212 Penn Avenue, and Edward T. Mills, 6222 Broad Street, all of Pittsburgh.

The Knox-Andressen Tool Co., Pittsburgh, has increased its capital stock from \$10,000 to \$50,000. E. E. Knox is secretary.

The Ward Tool & Forging Co., Latrobe, Pa., capitalized at \$60,000, has been incorporated to manufacture iron, steel and other metal products. The incorporators are J. W. Ward, Latrobe; A. A. Reisman and Adolph Otto, Pittsburgh.

The Cambria Car & Foundry Co., Fleetwood, Pa., capitalized at \$50,000, has been incorporated to manufacture iron and steel mine cars, well and mining machinery, mechanical devices, castings, etc. The incorporators are William J. Thiele and Herman J. Widmar, Johnstown, and J. M. Gastmann, Conemaugh.

The Crossley Lead & Machine Co., Erie, Pa., has increased its capital stock from \$15,000 to \$50,000. Henry Crossley is secretary.

The Rickart-Shafer Co., Erie, Pa., builder of machine tools, will erect a new plant, 50 x 152 ft., on Cherry Street.

Cleveland

CLEVELAND, Sept. 15.

The demand for machine tools continues fairly active, although no new lists of any size have developed. Scattered orders and inquiries for single machines and lots of two or three, are plentiful. However, the unsettled labor situation is causing some anxiety among manufacturers and resulting in the holding back of some orders. Business is coming largely from the automobile industry, including accessory manufacturers, but some orders are coming from the farm tractor field. There is a steady demand for lathes, drill presses and plain milling machines for prompt shipment. Buyers are able to secure delivery on these machines, but not in all sizes. A good demand is noted for screw machines, although orders are mostly from one to three. The call for punching and shearing machinery is better than a few weeks ago, orders coming from structural, automobile forge and oil tank shops. Portable electric drilling machines are moving well, but most of the business is coming from automobile manufacturers and body builders. Twist drill makers report an improvement and demand, particularly in high speed tools.

Cleveland machinery houses have received an inquiry from the James Mfg. Co., Fort Atkinson, Wis., for the following machine tools:

- One 24-in. sliding head gang drill.
- One No. 2 fox type turret lathe.
- One disk sanding machine, or combined spindle and disk sander.
- One 14 or 16-in. crank shaper.
- One universal wood-working machine.
- One 14-in. engine lathe.
- One flat chucking turret lathe to swing 14 in.
- One 5-hp. motor.

The company advises that it will build a new plant and foundry in the next few months, and will be in the market for machinery in addition to the above list.

The Brown Auto Carriage Co., Cleveland, has been reorganized as the Brown Body Corporation, with a capital stock of \$1,000,000, and will engage exclusively in the manufacture of automobile bodies. It has acquired three and one-half acres on Maywood Avenue between West Ninetieth and West Ninety-second streets and will shortly begin the construction of the first unit of its plant, which, it is stated, will eventually contain 200,000 sq. ft. of floor space.

The Cleveland Punch & Shear Works Co., Cleveland, has taken an order for three shearing machines for the Slick-Knox Co., Whitland, Pa., which is equipping a plant for the manufacture of motor truck frames.

The Standard Sand & Equipment Co., Cleveland, has taken an order for five large sand mixers for the Janesville, Wis. tractor plant of the General Motors Corporation.

The Lang Body Co., Cleveland, has placed a contract for a four-story factory, 160 x 260 ft.

The extension to the plant of the Chandler Motor Car Co., Cleveland, will be three-stories, 80 x 400 ft.

Contracts for the additions to the plant of the Cleveland Tractor Co., will be made shortly and will include a one-story building 182 x 440 ft., and a two-story structure, 90 x 190 ft.

The new building program to be carried out shortly by the Firestone Tire & Rubber Co., Akron, Ohio, includes the erection of a building 325 x 315 ft., equipped with overhead traveling crane, to be used as machine, forge and pattern shops, and another structure, 250 x 860 ft. for the Firestone Steel Products Co. Contract for the steel buildings were recently placed. It is stated that the extensions will involve an expenditure of approximately \$3,000,000.

The Steel Stamping Co., Lorain, has completed plans for its new plant, which will include a main building, 50 x 130 ft., enameling room, 50 x 50 ft., and an office building, all of brick and steel, one-story.

The James Ohlen & Sons Saw Mfg. Co., Columbus, Ohio, manufacturer of circular wood, metal band, and other types of saws, saw machinery, tools and accessories, and George H. Bishop & Co., Lawrenceburg, Ind., manufacturers of saws, saw frames, handles, trowels, etc., have effected a merger under the name of the Ohlen-Bishop Mfg. Co., and will manufacture a complete line of saws for wood and metal-cutting purposes. The plants at Columbus and Lawrenceburg, will be enlarged.

The Reidon Co., Toledo, Ohio, has been incorporated with a capital stock of \$100,000 and has taken over the plant of the Toledo Chandelier Mfg. Co., to manufacture electrical fixtures.

The Chalmers Pump Mfg. Co., Lima, Ohio, has effected its organization and succeeded the Chalmers Mfg. Co. It has a capital stock of \$300,000. C. S. Brown is president; F. B. Shumate, vice-president, and Fred Bleantz, secretary and treasurer.

The Standard Bearing Metal Co., Sandusky, Ohio, has acquired a portion of the plant formerly occupied by the Roberts Motor Co., and will manufacture babbitt metal.

J. B. Clow & Sons are enlarging their pipe foundry at Coshocton, Ohio, by the erection of an addition, 160 ft. long. New equipment will be installed.

The Gibbs Mfg. Co., Canton, Ohio, is in the market for various sizes of light gray iron toy wheel castings, running from 7 to 23 to the pound. The company's requirements would run upward of over 1,000,000 wheels.

St. Louis

ST. LOUIS, Sept. 15.

The Fischer Cement & Roofing Co., Little Rock, Ark., capitalized at \$50,000, will establish a cement plant. W. W. Fischer can be addressed.

The Monroe Compress Co., Monroe, La., organized by Joseph Newberger, Memphis, Tenn., has acquired the plants of the Standard Compress and the People's Compress companies which will be consolidated and new machinery to cost about \$100,000 installed.

The Bayer Steam Soot Blower Co., 2828 La Salle Street, St. Louis, L. J. Bayer, president, will equip a plant 135 x 140 ft. for the manufacture of blowers.

The Algyre-Gilmore Tool Co., Okmulgee, Okla., C. W. Wangerin interested, will equip a \$75,000 plant for the manufacture of tools.

The Petroleum Corporation of America, 25 Broad Street, New York, capital \$80,000,000, will merge 15 Oklahoma oil companies and refineries with a daily capacity of 35,000 bbl. and add new equipment and readjust existing plants for more efficient operation.

The Davis Planing Mill Co., Springfield, Mo., A. H. Davis, president, has increased its capital by \$50,000 for the purchase of new machinery.

The American Hinge Co., St. Louis, capital \$250,000, H. A. Paul, Muskogee, Okla., interested, will equip a plant for the manufacture of hinges.

The Miller Lightning Rod Co., St. Louis, L. Miller, president, will equip a two-story factory, 75 x 100 ft., for the manufacture of lightning rods. Electrically operated machinery will be installed.

The Liberty Systems Corporation, 2310 Locust Street, St. Louis, will equip a factory for the manufacture of its indexograph devices.

The Vaughn Motor Co., Shreveport, La., has been incorporated with a capital of \$30,000 by S. H. Bolinger and associates, to manufacture motor trucks and parts.

Milwaukee

MILWAUKEE, Sept. 15, 1919.

The machine-tool situation in this vicinity is improving. The first half of September has produced more business, especially in milling machines, than the corresponding period of August, which was the best month since the armistice. Export requirements are gradually becoming a factor in local trade, orders having been booked in the last week or ten days from South America and the Scandinavian countries. Domestic business comes largely from the Central West, and the automotive industries remain the principal source of demand. New business is confined to small lots, but these form a very satisfactory aggregate, and it is the rule that tool builders are selling more machines than they are making.

The Gilson Mfg. Co., Port Washington, Wis., founder and machinist, has contracted with the Worden-Allen Co., Milwaukee, for the erection of a brick and steel machine shop addition, 40 x 160 ft., for which some new equipment is being purchased. The new facilities will be used largely for the gas engine department. The improvement is estimated to cost \$50,000 complete. Olaf Elton is vice-president and works manager.

The Western Machine Co., 248 Fourth Street, Milwaukee, manufacturer of automatic screw machine products, has increased its capital stock from \$5,000 to \$25,000 to accommodate the growth of its business. The facilities are being enlarged gradually. Eric Ridstrom is secretary and treasurer.

The Globe Foundry Co., Sheboygan, Wis., is being incorporated with a capital stock of \$100,000 for the purpose of erecting and operating a new grey-iron shop at Wildwood Avenue and North Eighteenth Street. The promoters are members of the Globe Foundry & Machine Co., Sheboygan, now known as the Globe Co. When the new foundry is completed, the present foundry department of the Globe Co. will be converted into additions to the machine shop at North Ninth Street and Pennsylvania Avenue. This movement is to establish two distinct enterprises, one devoted exclusively to machine work and the other to casting work. G. F. Honold and Fred Leicht, of the Globe Co., and Gus A. DeWilde, Jr., a new interest, are the incorporators of the Globe Foundry Co.

The Rhinelander Boat Co., Rhinelander, Wis., is being organized by John Gilligan to manufacture power and row boats with metal and frame hulls. For the present, manufacturing space will be leased from the Oneida Boat Co., Rhinelander, but in the spring a new factory will be erected.

The Resilient Auto Tire Co., Milwaukee, has been incorporated with a capital stock of \$100,000 to manufacture semi-solid tires and other automotive supplies. The incorporators are Edward A. Mahal, Joseph Hornak and Charles Uhrinecz, all of Milwaukee.

The Harley-Davidson Motor Co., Milwaukee, manufacturer of motorcycles, bicycles and air-cooled gas engines, has awarded the general contract to the Federal Engineering Co., Stephenson Building, for the erection of a six-story brick, steel and reinforced-concrete addition, 120 x 213 ft., at Thirty-eighth and Chestnut streets. The building will cost \$200,000, exclusive of equipment, which is now being purchased, and

Involves a miscellaneous requirement of tools. William Davidson is works manager.

The Briggs & Stratton Co., Milwaukee, has been granted a permit to erect a five-story manufacturing addition, elliptical, 62 x 172 ft. and 62 x 155 ft., which will double the capacity and cost about \$375,000, with a new power plant now under construction. The company manufactures gas engine ignition devices and other automotive equipment. The greater part of the addition will be used for the production of a motor-wheel attachment for bicycles, a new department acquired recently from the A. O. Smith Corporation, Milwaukee.

The Kewaskum Aluminum Co., Kewaskum, Wis., has been organized by local business men and is being incorporated with a capital stock of \$150,000 to manufacture aluminum kitchen utensils and similar products. Plans are being prepared for the first unit of a new factory, 100 x 200 ft., two stories. Inquiry is being made for machinery and other equipment.

The Perfection Bottle-Cap Co., Milwaukee, has been organized with \$100,000 capital stock by Carl J. Schuster, Louis E. Will and August E. Barthmann, who have obtained letters patent on machinery and products for capping bottles with metallic devices. The promoters are not ready to make public their plans.

The International Harvester Co., Milwaukee, has been granted a permit to erect a one-story brick and concrete structure, 119 x 126 ft., to be used as a training building for apprentices at the Milwaukee works at Fourteenth Avenue and Park Street. The building will cost \$30,000 and the equipment approximately an equal amount. Paul F. Schryer is works manager.

The Ideal Barn Equipment Co., Horicon, Wis., is contemplating the erection of an addition to increase its capacity 100 per cent. The present shop is being operated with night and day shifts. The company makes steel appliances and devices for dairy barns.

The Oneida Electric Truck Co., Green Bay, Wis., has been organized with a capital stock of \$300,000 by local interests identified with the Oneida Motor Truck Co., who have acquired patents on an electric truck design which for the present will be manufactured in the motor truck works. Officers of the new corporation, which is a distinct enterprise, are: President, John T. Phillips; vice-president, F. H. Bogart, factory manager Oneida Motor Truck Co.; secretary, Samuel H. Cady; treasurer, William Hoberg. Lafayette Markle, president and general manager of the Oneida Motor Truck Co., is a director.

The Merrill Elevator Co., Merrill, Wis., has plans for a four-story addition, 50 x 100 ft., to be equipped as a cold storage warehouse, with a new refrigerating unit driven by the present engine.

The Peshtigo Pulp & Paper Co., Peshtigo, Wis., has awarded the contract to the Jorgenson Construction Co., Denmark, Wis., for erecting a two-story brick and concrete mill and factory building, 70 x 242 ft., at a price of \$64,000. The paper and pulp machinery will cost about \$75,000 additional.

The Bull Dog Tractor Co., Oshkosh, Wis., a new \$750,000 corporation, is negotiating for manufacturing space in an existing building pending the erection of a plant of its own. Officers have been elected as follows: President, Arthur H. Gruenwald; vice-president and chief engineer, J. H. Tritz; secretary, S. J. Kellner, Grand Rapids; treasurer, Ira Parker, Jr.; directors, Eber Simpson, Louis Stroebing and Henry Durler.

Detroit

DETROIT, Sept. 15.

The Packard Motor Car Co., Detroit, has under construction a three-story extension to its plant which will add about 250,000 sq. ft. of floor space to the present total of 60 acres. More than \$1,750,000 will be invested in the building and equipment. It is expected that the new unit will be in operation in about six months.

The American Commercial Car Co., Detroit, will increase its capital stock from \$250,000 to \$1,000,000 and enlarge its manufacturing facilities.

The Jaxon Steel Products Co., Jackson, Mich., manufacturer of motor car wheel rims, is enlarging its plant at a cost of about \$250,000. Additional equipment will be purchased to increase the output 35 per cent. The extensions include two one-story buildings, 100 x 460 ft. and 120 x 140 ft., and are expected to be completed in about a month.

The Michigan Motor Specialties Co., Detroit, Mich., has had plans prepared for the erection of a new two-story boiler plant, 38 x 40 ft.



"The vicious circle is infinite; increased wages are over-capitalized for inflated profits, and the cost of goods mounts faster than the wage level."—Statement of the Four Brotherhoods of Railroad Employees. From the New York *Evening Post*.

The Anderson Electric Car Co., Detroit, Mich., manufacturer of the Detroit electric automobile, has awarded a contract to H. G. Christian, Stevens Building, for the erection of a new five-story plant, 50 x 180 ft., at Aberle and Russell streets.

The Hudson Motor Car Co., Jefferson Avenue, Detroit, is planning for the erection of a new works for the manufacture of its Essex automobile. The proposed plant is estimated to cost about \$2,250,000, \$1,000,000 of which will be used for machinery and equipment. It plans to double its output, increasing production aggregating about 40,000 cars, equally divided between the Hudson and the Essex in 1919, to 70,000 cars in 1920.

The Wilson Body Co., Twenty-sixth and Farragut streets, Bay City, Mich., has completed plans for the erection of a one-story brick addition to cost about \$200,000, including equipment. C. R. Wilson is president.

The Production Tool Co., 1047 East Palmer Street, Detroit, has awarded a contract to William Logan, 442 West Philadelphia Street, for the erection of a new one-story machine shop, 30 x 80 ft., on LeGrand Street, to cost about \$30,000. Peter J. Terres is president.

The Union Motor Truck Co., Bay City, Mich., is having plans prepared for a brick and steel addition, 100 x 500 ft. for assembling work, estimated to cost with equipment about \$80,000. Howard Woodworth is general manager.

The Parker Rust-Proof Co., Conant Road, Detroit, has awarded a contract to Corrick Brothers, Owen Building, for the erection of the proposed one and two-story addition, 148 x 150 ft., to cost about \$75,000.

Cincinnati

CINCINNATI, Sept. 15.

All local machine-tool firms have sufficient business on hand to keep their plants busy. It is estimated that about 75 per cent of the work is for domestic consumption and 25 per cent for shipment abroad. Export business is not as brisk as it has been, but a number of orders are still coming from Belgium and England, and a few scattered ones from France. Export shipping delays are not as harassing as they were a few months ago, although shipments do not reach destinations as quickly as in normal times. Some machine-tool makers complain of the slow delivery of castings from the foundries. Wood-working equipment is in excellent demand.

With the exception of Government holdings, there are comparatively few second-hand machine tools for sale in this section. Second-hand dealers report an increasing number of inquiries with but little actual business. The uncer-

tainty of the labor situation is given as one reason for delaying the placing of orders.

At Dayton, Ohio, factory additions are under way at the plants of the Domestic Engineering Co., the National Cash Register Co., the Duriron Castings Co., and others. The large tractor plant of the Ford Co., now under construction at Hamilton, Ohio, is expected to be ready for occupancy by Jan. 1.

It is expected that the Reliance Tractor & Engine Co., Portsmouth, Ohio, will soon begin the removal of its plant to Cincinnati, and will make a specialty of the manufacture of tractors.

The Cooper Storage Battery Co., Cincinnati, has been incorporated with \$250,000 capital stock, and will equip a plant in Madisonville for the manufacture of storage batteries. I. J. Cooper, Eighth and Main streets, is one of the principal incorporators.

Work has been commenced on an addition to the power plant of the Hooven, Owen, Rentschler Co., Hamilton, Ohio. Later on the company expects to make an addition to its machine shop.

The Hamilton Caster & Mfg. Co., Hamilton, Ohio, has increased its capital stock from \$30,000 to \$40,000. Nothing has been given out as to any increase in its manufacturing facilities.

The Maxwell Motor Car Co., Dayton, Ohio, announces that it will increase its manufacturing force 600 men, who will be engaged in making closed automobile bodies.

The Rotospeed Co., Dayton, maker of letter duplicating machines and other specialties, will remove its plant to more commodious quarters in the Dickey Building.

The Dayton Fan & Motor Co., Dayton, Ohio, whose incorporation was recently noted, advises that it is constructing a five-story concrete and brick factory which it expects to have ready for occupancy at an early date. In addition to its regular line of electric fans the company will build small motors. The officers are: President, E. O. Waymire; vice-president, L. W. James; secretary and treasurer, C. C. Miner, and factory manager, C. J. Schnaus.

Work has been commenced on the new plant of the Thomas & Armstrong Co., London, Ohio. When completed the output of sheet metal specialties will be more than doubled.

The Franklin Brick & Tile Co., Columbus, Ohio, has been incorporated with \$1,500,000 capital stock and has purchased a brick plant at Taylor's Station. It is erecting eight additional kilns for the manufacture of drain tile and fireproofing material. F. M. Morrison is president and general manager.

The Sunray Stove Co., Delaware, Ohio, has had plans prepared for two one-story buildings, 80 x 80 ft. and 40 x 50 ft., of reinforced concrete.

The Rainbow Tire & Rubber Co., Delaware, Ohio, expects to begin the erection of a plant for the manufacture of automobile tires within the next ten days. Charles E. Ross is president.

The Columbus Metal Products Co., Columbus, recently incorporated, advises that later it expects to equip a factory for the manufacture of a patented master flush valve and a master automobile lock. DeWitt H. Wyatt is consulting engineer.

The Wadsworth Foundry Co., Wadsworth, Ohio, has increased its capital stock from \$15,000 to \$100,000, and is erecting a foundry on the site of its former plant destroyed by fire some time ago. Within a week after its fire the company started a foundry at Seville, Ohio, to take care of its jobbing work.

The Cisco Machine Tool Co., Cincinnati, has increased its capital stock from \$150,000 to \$250,000 to take care of its expanding business and cover extensions recently made.

A. F. Cook, Urbana, Ohio, has opened a pattern shop on Sycamore Street, which will be equipped to take care of machine tool work.

Greathouse Brothers & Co., Louisville, Ky., have been organized to manufacture sheet metal products. J. W. Greathouse heads the company.

A new ice manufacturing and cold storage plant to cost about \$100,000, including equipment, will be constructed by the Crystal Ice & Cold Storage Co., Ashland, Ky., as an extension to its plant.

The Wadsworth Watch Case Co., Dayton, Ky., has arranged for the erection of an addition to its plant to cost about \$20,000.

Texas

AUSTIN, Sept. 13.

The Texas United Oil & Refining Co., Fort Worth, plans to build an oil refinery with a daily capacity of 5000 bbls., either at Gorman or Desdemona.

The Navarro Oil & Refining Co., Corsicana, which was recently incorporated with a capital of \$1,000,000, announces that it will build an oil refinery with a daily capacity of 1000 bbls. E. P. Maggard is president.

Ed Steves & Son, San Antonio, manufacturers of lumber products, will build a two-story and basement reinforced concrete factory to cost about \$100,000.

C. J. Browning and associates, Fort Worth, have organized the Adamant Products Co. and purchased land at Niles City, upon which they will build a brick and tile plant.

The Spencer Petroleum Co., Dallas, has been organized with a capital of \$5,000,000, and plans to build a refinery. It has taken over the production holdings of J. E. Spencer, Carbon, and H. E. Spencer, Dallas.

The Gulf States Tractor Co., Orange, Tex., has been incorporated in Delaware with a capital of \$6,000,000 by A. C. Fleig, W. F. and W. B. McCorquodale, to manufacture motor trucks and tractors.

The machine shop to be erected by the Jakehamon Tool Co., Jakehamon, Tex., will be used for the manufacture of heavy oil-field tools, and will be equipped with four lathes, drill presses, steam hammer, pipe cutting and threading machines, etc. E. A. Perry, Coalgate, Okla., is president.

The Holliday Refining Co., Wichita Falls, Tex., has completed plans and specifications for the erection of a new oil refinery to cost about \$500,000, including machinery and equipment. It will have an initial capacity of about 2000 bbl. of oil per day. J. G. Lawrence & Co., Little Rock, Ark., are engineers.

The Auto Equipment Co., Fort Worth, Tex., has been incorporated with a capital of \$350,000 by S. B. Franklin, E. M. Hyder and Morgan Bryan, Fort Worth, to manufacture automobile equipment, parts, etc.

The Houston Lighting & Power Co., Houston, Tex., is planning for the erection of an addition to its steam plant to cost about \$75,000.

Indianapolis

INDIANAPOLIS, Sept. 15.

The Revere Motor Car Corporation, Logansport, Ind., has been organized to manufacture the Revere motor car. The officers are: Newton Van Zandt, president; James Henderson, vice-president; C. H. Wilson, treasurer; Frank Amoss, secretary. Eastern capital has become interested and production will be increased.

The O. W. Ward Mfg. Co., Indianapolis, has been incorporated with \$20,000 capital stock to manufacture back band buckles. The directors are O. W., L. A. and F. Ward.

The Lockhart Mfg. Co., Indianapolis, has been incorporated with \$20,000 capital stock to manufacture tank heaters. The directors are Howard and M. Lockhart and Leon L. Cornell.

The Continental Auto Parts Co., Knightstown, Ind., has been consolidated with the Shelby Mfg. Co., Columbus, Ind. and the equipment of the former plant will be moved to Columbus. The Shelby company has been manufacturing iron and steel products.

Thomas W. Warner, of the T. W. Warner Co., Muncie, Ind., closely allied with the General Motors Corporation, states that within the next 18 months the General Motors Corporation will spend \$4,000,000 to \$5,000,000 in construction of new units to its plant in that city and will employ 6000 to 8000 men. A few months ago it purchased the Interstate Motor Co. and 40 acres adjoining the plant.

The F. & W. Mfg. Co., Indianapolis, has been incorporated with \$30,000 capital stock to manufacture mechanical devices and tools. The directors are George E. Fris, James D. Wilshire and Roy Zapf.

The National Automotive Co., Indianapolis, has been incorporated with \$25,000 capital stock to manufacture automobiles. The directors are Bruce M. Wylie, James M. Clarke and George A. Pearson.

The Indianapolis Body Corporation, Indianapolis, has been incorporated with \$150,000 capital stock to manufacture automobile bodies and accessories. The directors are Harry P. Millspaugh, Clarence R. Irish and Peter M. Kling.

The J. F. Rose Mfg. Co., Indianapolis, has been incorporated with \$20,000 capital stock, to manufacture hand pumps and air faucets. The directors are J. F. Rose, E. Bensley and Fred H. Rose.

California

LOS ANGELES, Sept. 9.

The Warnerlite Co., Davenport, Iowa, manufacturer of lighting plants and electric automobile equipment, is having plans prepared by W. P. Shepherd and Herbert A. Eamm, architects, Central Building, Pasadena, Cal., for the erection of its proposed new plant on South Marengo Avenue, Pasadena. It will be of reinforced-concrete and for initial operations will comprise a one-story factory 260 x 300 ft., and administration building, 80 x 100 ft., with two wings, each 60 x 80 ft. The cost will be about \$100,000.

The Welch Motor Equipment Co., Los Angeles, has been incorporated with a capital stock of \$10,000 by George R. Welch, Watson D. and Harry P. Hubbard, to manufacture automobile parts and equipment.

The California Machinery & Supply Co., 1811-13 East Seventh Street, Los Angeles, has been organized to manufacture machinery and parts. George E. Cloud heads the company.

The Alloy Steel & Metals Co., Los Angeles, has been incorporated with a capital stock of \$250,000 by A. W. Warr, B. J. Quinn and F. R. Knight, to manufacture iron and steel products.

The Standard Gas Engine Co., San Pedro, Los Angeles, has filed plans for the erection of a one-story addition, 40 x 60 ft., to its works on the Fish Harbor Wharf.

The T N T Automobile Mfg. Co., Los Angeles, has been incorporated with a capital stock of \$1,000,000 by Harry A. Miller, Edward R. Maier, and William R. Ruess to manufacture automobiles.

The California Convertible Tractor Co., Los Angeles, has filed notice of organization to manufacture motor tractors. Randall T. Curtis, 976½ South Serrano Street, heads the company.

The Pacific Oil & Lead Co., Richmond, Cal., will install new electric motors and operating machinery at its works for increased capacity.

The Cleveland Motor Car Co., Los Angeles, has arranged for the erection of a new four-story, reinforced-concrete repair shop and automobile service works, 100 x 150 ft., at the corner of Eleventh and Flower streets.

The Hoerner's Adjustable Valve Seat Facer Co., 3939 Moneta Avenue, Los Angeles, has been organized to manufacture mechanical products. Frank Hoerner heads the company.

The Leach-Biltwell Motor Co., Los Angeles, has been incorporated with a capital of \$1,000,000 by M. A. Leach, E. P. Hughes and L. G. Martin, to manufacture motor cars.

The Blohm Automatic Cotton Harvester Co., 555 East Seventeenth Street, Los Angeles, has filed notice of organization to manufacture cotton harvesting machinery. George Blohm, 168 North Main Street, and A. Trojan, 313 North Main Street, head the company.

The Master Carburetor Co., Los Angeles, is having plans prepared for the construction of a new one-story foundry, 120 x 147 ft., at Main and Thirtieth streets. Charles E. Love is head of the company.

The Southwestern Safe Co., Long Beach, Cal., has been organized to manufacture safes and similar products. A. H. Smith, 959 East Fifth Street, heads the company.

The Hazen Metal Collapsible Shipping Case Co., Long Beach, has been incorporated with a capital of \$200,000 by James A. Hazen, Earl B. Gandy, B. F. Tucker and William B. McQueen, Long Beach, to manufacture special metal products.

The Pacific Northwest

SEATTLE, Sept. 9.

The car shortage in western Washington and Western Oregon is becoming serious. Coal producers are particularly affected, as few Washington mines have coal storage bunkers. The shortage is due to the recent strike of railroad shopmen, but their return to work has brought no relief.

The Chicago Pneumatic Tool Co., Seattle, will shortly move to a new location where a two-story building is being equipped for its use. Service station will also be maintained.

The Parmalee Boiler Co., Seattle, will erect a new shop and assembling plant.

The Unit Brick & Tile Co., Seattle, plans the establishment of works for the manufacture of concrete brick, etc. It also contemplates establishing similar plants in Yakima and Spokane.

The Oregon-American Lumber Co., Portland, plans the

immediate development of 27,000 acres of timber lands. Two large sawmills will be erected along the Willamette River and 31 miles of railroad will be built.

The Peshastin Lumber Co., Leavenworth, Wash., whose plant was recently destroyed by fire with a loss of \$100,000, will rebuild.

The Valley Packing Co., Salem, Ore., which is erecting a plant, will install 15 electric motors.

The Alsea Lumber Co., Eugene, Ore., will construct a sawmill with a daily capacity of 150,000 ft. It will also build a six-mile logging railroad.

The Saginaw Mill Company, Blaine, Wash., whose sawmill was recently destroyed by fire, plans to rebuild its plant immediately. New plant will have larger capacity than old one.

The sawmill of the Eastern Oregon Lumber Co., Enterprise, Ore., which was recently destroyed by fire, with a loss of \$20,000, will be rebuilt at once. It had a daily capacity of 125,000 ft.

It is reported that the Angeles Aircraft Corporation will build a plant in Vancouver, Wash., at a cost of about \$60,000; work to start within 60 days.

The plant of the Astoria Pulp & Paper Co., Astoria, was recently destroyed by fire with an estimated loss of \$250,000. It is reported that it will be rebuilt.

The plant of the Seaside Sash & Door Factory, Seaside, Ore., was completely destroyed in a recent fire with a loss of more than \$175,000. Machinery valued at \$125,000 had recently been installed.

The G. M. Standifer Construction Corporation will start immediately on the construction in its Vancouver yard of five 9400-ton steel ships. Mr. Standifer states the Shipping Board is offering contracts at figures that no coast yard can accept, and his company is therefore going ahead on ship construction for the open market.

Canada

TORONTO, Sept. 15.

Dealers in machinery and machine tools report a fair volume of orders for general manufacturing requirements. Second-hand equipment is moving well, but the demand is mostly for new tools. Manufacturers are still behind with orders and dealers, in many cases, are unable to give any definite date as to when shipments can be made.

The Pressed Metals Co. of Canada, Ltd., 112 Adelaide Street, East, Toronto, will sell its foreign patent rights on bushings to the International Bushings, Ltd., Toronto, which has been incorporated with a capital stock of \$25,000,000 by Russell P. Locke, 120 Bay Street; Frank M. Squires; Lillian M. Neal and others as provisional directors to manufacture iron, steel, brass and other metals from the ore to the finished products. The Pressed Metals Co. of Canada, will retain patent rights in Canada and will probably engage in export business with Australia, New Zealand, South Africa and South America.

The Pratte Pianos Co. of Montreal, Ltd., Montreal, has been incorporated with a capital stock of \$200,000 by Philippe J. A. Pratte, Benoit Bissonnette and others to manufacture pianos, organs, gramophones and other musical instruments.

The Universal Batteries, Ltd., Toronto, has been incorporated with a capital stock of \$150,000 by Collier C. Grant, John G. Leckie, and others to manufacture electrical apparatus, batteries, etc.

The spring plant of the Dowsley Spring & Axle Works, St. George Street, Chatham, Ont., was entirely destroyed by fire Sept. 11 with an estimated loss of over \$50,000. It is expected that work will be started immediately for the erection of a new factory.

The Slingsby Mfg. Co., Ltd., Brantford, Ont., is in the market for a 150 to 200-kw., 550 volt, 60 cycle generator.

The factory owned by the Holden-Morgan Co., 579 Richmond Street, West, Toronto, was damaged by fire with a loss to building and equipment estimated at \$2,000. The company manufactures machinists' supplies, etc.

The Gurney Foundry Co., Ltd., Toronto, will increase its capital stock from \$750,000 to \$2,000,000.

The Willard Storage Battery Co., Cleveland, Ohio, has inaugurated a system of paying employees by bank deposits, where such may be acceptable to the worker, and many of the 2300 men at the plant have voted to be paid in this manner. The move has been made to encourage thrift. On pay days the company gives the employees a duplicate deposit slip, showing the wages that have been deposited in such bank as has been selected by the particular employee.

Current Metal Prices

On Small Lots, from Merchants' Stocks, New York City

The quotations given below are for small lots, as sold from stores in New York City by merchants carrying stocks.

As there are many consumers whose requirements are not sufficiently heavy to warrant their placing orders with manufacturers for shipment in carload lots from mills, these prices are given for their convenience.

On a number of articles the base price only is given, it being impossible to name every size.

The wholesale prices at which large lots are sold by manufacturers for direct shipment from mills are given in the market reports appearing in a preceding part of THE IRON AGE under the general headings of "Iron and Steel Markets" and "Metal Markets."

Iron and Soft Steel Bars and Shapes

Per lb.

Bars:

Refined iron, base price	3.37c.
Burden's H. B. & S. bar iron, base price	6.10c.
Burden's best bar iron, base price	6.30c.
Swedish bars, base price	20.00c.

Soft Steel:

3/4 to 1 1/2 in., round and square	3.37c.
1 to 6 in. x 3/8 to 1 in.	3.37c.
1 to 6 in. x 1/4 to 5/16	3.47c.

Rods—5/8 and 11/16	3.42c.
Bands—1 1/2 to 6 x 3/16 to No. 8	4.07c.

Shapes:

Beams and channels—3 to 15 in.	3.47c.
Angles:	
3 in. x 1/4 in. and larger	3.47c.
3 in. x 3/16 in. and 1/2 in.	3.72c.
1 1/2 to 2 1/2 in. x 1/8 in.	3.52c.
1 1/2 x 2 3/4 in. x 3/16 in. and thicker	3.47c.
1 to 1 1/4 in. x 3/16 in.	3.52c.
1 to 1 1/4 in. x 1/8 in.	3.57c.
7/8 x 7/8 x 1/8 in.	3.62c.
3/4 x 1/8 in.	3.67c.
5/8 x 1/8 in.	4.07c.
1/2 x 3/32 in.	5.17c.

Tees:	
1 x 1/2 in.	3.87c.
1 1/4 in. x 1 1/4 x 3/16 in.	3.77c.
1 1/2 to 2 1/2 x 1/4 in.	3.57c.
1 1/2 to 2 1/2 x 3/16 in.	3.57c.
3 in. and larger	3.52c.

Merchant Steel

Per lb.

Tire, 1 1/2 x 1/2 in. and larger	3.37c.
Toe calk, 1/2 x 3/8 in. and larger	4.25c.
Open-hearth spring steel	6.00c.
Standard cast steel, base price	14.00c.
Extra cast steel	18.00 to 20.00c.
Special cast steel	23.00 to 25.00c.

Tank Plates—Steel

Per lb.

1/4 in. and heavier	3.67c. to 3.92c.
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Sheets

Blue Annealed

Per lb.

No. 8 and 3/16 in.	4.52c.
No. 10	4.57c.
No. 12	4.62c.
No. 14	4.67c.
No. 16	4.77c.

Box Annealed—Black

Soft Steel C. R., One Pass, per lb.	Wood's Refined, per lb.
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Nos. 18 to 20	.55c.
Nos. 22 and 24	.56c.
No. 26	.565c.
No. 28	.575c.
No. 30	.625c.

No. 28, 36 in. wide, 10c. higher.
Wood's Keystone Hammered,

18-24 gage, 9 3/4c.; 26-28 gage, 10 1/4c.

Galvanized

Per lb.

No. 14	6.10c. to 6.35c.
No. 16	6.25c. to 6.50c.
Nos. 18 and 20	6.40c. to 6.65c.
Nos. 22 and 24	6.55c. to 6.80c.
No. 26	6.70c. to 6.95c.
No. 27	6.95c. to 7.20c.
No. 28	7.00c. to 7.25c.
No. 30	7.50c. to 7.75c.
No. 28, 36 in. wide, 20c. higher.	

Corrugated Roofing, Galvanized

2 1/2 in. corrugations, 10c. per 100 lb. over flat sheets.

Steel Wire

BASE PRICE* ON NO. 9 GAGE AND COARSER Per lb.

Bright basic	5.25c.
Annealed soft	5.25c.
Galvanized annealed	6.00c.
Coppered basic	6.00c.
Tinned soft bessemer	7.25c.

*Regular extras for lighter gauges.

Brass Sheet, Rod, Tube and Wire

BASE PRICE

High Brass Sheet	29c. to 30.75c.
High Brass Wire	29c. to 30.75c.
Brass Rod	28c. to 29.75c.
Brass Tube	44 1/2c.

Copper Sheets

Sheet copper, hot rolled, 16 oz., 33 1/2c. to 36c. per lb. base.

Cold rolled, 14 oz. and heavier, 1c. per lb. advance over hot rolled.

Tin Plates

Bright Tin	Grade "AAA"	Grade "A"	Charcoal	14x20	Tin Plates	Coke—14x20	Primes Wasters
80 lb.	\$8.35	\$8.10	90 lb.	8.45	8.20	8.80	8.55
100 lb.	8.55	8.30	100 lb.	8.55	8.30	8.80	8.55
IC	\$11.30	\$10.05	IC	10.00	9.75	10.00	9.75
IX	13.50	12.00	IX	10.95	10.70	10.95	10.70
IXX	15.25	13.75	IXXX	11.90	11.65	11.90	11.65
IXXX	17.00	15.50	IXXXX	12.85	12.60	12.85	12.60
IXXXX	18.75	17.25					

Terne Plates

8-lb. Coating 14x20

100 lb.	\$8.50
IC	8.65
IX	9.65
Fire door stock	11.75

Tin

Straits pig	72c. to 74c.
Bar	80c. to 85c.
American pig, 99 per cent	70c. to 72c.

Copper

Lake Ingots	26c.
Electrolytic	24c. to 25c.
Casting	24c. to 25c.

Spelter and Sheet Zinc

Western spelter	8 1/2c. to 9c.
Sheet zinc, No. 9 base, casks	12c.; open 12 1/2c.

Lead and Solder*

American pig lead	6 1/2c. to 7c.
Bar lead	7 1/2c. to 8 1/2c.
Solder 1/2 and 1/2 guaranteed	43c.
No. 1 solder	38c.
Refined solder	33c.

*Prices of solder indicated by private brand vary according to composition.

Babbitt Metal

Best grade, per lb.	.90c.
Commercial grade, per lb.	.50c.

Antimony

Asiatic	9c. to 10c.
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Aluminum

No. 1 aluminum (guaranteed over 99 per cent pure), in ingots for remelting, per lb.	.35c. to .37c.
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Old Metals

The market is quiet. Dealers' buying prices are nominally as follows:

Cents Per lb.	
Copper, heavy and crucible	17.00
Copper, heavy and wire	16.00
Copper, light and bottoms	14.00
Brass, heavy	10.50
Brass, light	7.50
Heavy machine composition	15.50
No. 1 yellow rod brass turnings	10.00
No. 1 red brass or composition turnings	11.50
Lead, heavy	4.75
Lead, tea	3.75
Zinc	5.00

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ents
per lb.
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6.00
4.00
0.50
7.50
15.50
10.00
11.50
4.75
3.75
5.00